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STUDENT OUTLINE

WARFIGHTING

MCT0101

6/27/2019

LEARNING OBJECTIVE FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) With the aid of references, embody the Marine Corps philosophy of warfighting by applying the tenants to dictate an approach to duty, in war, in crisis, and in peace. (MCCS-LDR-1009).

STUDENT INFORMATION

OVERVIEW: The purpose of this discussion is to provide you with a foundational understanding of Marine Corps combat doctrine. To accomplish this we will discuss the nature of war, theory of war, preparing for war, and the conduct of war. This lesson should be seen as the basis for all other tactics, techniques and procedures that will be taught during this course.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. THE NATURE OF WAR.

a. War Defined.

(1) War is a violent clash of interests between or among organized groups characterized by the use of military force.

(2) The essence of war is a violent struggle between two hostile, independent, and irreconcilable wills, each trying to impose itself on the other.

(3) The object in war is to impose our will on our enemy.

(4) Total war and perfect peace rarely exist in practice.

b. **Friction.**

(1) Portrayed as a clash between two opposing wills, war appears a simple enterprise.

(2) Friction is the force that resists all action and saps energy. It makes the simple difficult and the difficult seemingly impossible.

(3) The very essence of war as a clash between opposed wills creates friction. In this dynamic environment of interacting forces, friction abounds.

(4) Friction may be mental, as in indecision over a course of action. It may be physical, as in effective enemy fire or a terrain obstacle that must be overcome. Friction may be external, imposed by enemy action, the terrain, weather, or mere chance. Friction may be self-induced, caused by such factors as lack of a clearly defined goal, lack of coordination, unclear or complicated plans, complex task organizations or command relationships, or complicated technologies.

(5) While we should attempt to minimize self-induced friction, the greater requirement is to fight effectively despite the existence of friction. One essential means to overcome friction is the will; we prevail over friction through persistent strength of mind and spirit.

(6) While training should attempt to approximate the conditions of war, we must realize it can never fully duplicate the level of friction of real combat.

c. **Uncertainty.**

(1) Uncertainty pervades battle in the form of unknowns about the enemy, about the environment, and even about the friendly situation.

(2) War is intrinsically unpredictable. At best, we can hope to determine possibilities and probabilities.

(3) This implies a certain standard of military judgment:

(a) What is possible and what is not?

(b) What is probable and what is not?

(4) By judging probability, we make an estimate of our enemy's designs and act accordingly.

(5) Because we can never eliminate uncertainty, we must learn to fight effectively despite it.

(6) One important source of uncertainty is a property known as nonlinearity. Here the term does not refer to formations on the battlefield but describes systems in which causes and effects are disproportionate.

(7) By its nature, uncertainty invariably involves the estimation and acceptance of risk. Risk is inherent in war and is involved in every mission. Risk is equally common to action and inaction. Risk may be related to gain; greater potential gain often requires greater risk.

(8) Part of uncertainty is the ungovernable element of chance. Chance is a universal characteristic of war and a continuous source of friction.

d. **Fluidity.**

(1) Fluidity is an inherent attribute of war. Each episode in war is the temporary result of a unique combination of circumstances, presenting a unique set of problems and requiring an original solution.

(2) Since war is a fluid phenomenon, its conduct requires flexibility of thought. Success depends in large part on the ability to adapt—to proactively shape changing events to our advantage as well as to react quickly to constantly changing conditions.

(3) It is physically impossible to sustain a high tempo of activity indefinitely, although clearly there will be times when it is advantageous to push men and equipment to the limit.

e. **Disorder.**

(1) Disorder is an inherent characteristic of war; we can never eliminate it. In the heat of battle, plans will go awry, instructions and information will be unclear and misinterpreted, communications will fail, and mistakes and unforeseen events will be commonplace.

(2) Each encounter in war will usually tend to grow increasingly disordered over time. As the situation changes

continuously, we are forced to improvise again and again until finally our actions have little, if any, resemblance to the original scheme.

(3) We must not only be able to fight effectively in the face of disorder, we should seek to generate disorder and use it as a weapon against our opponent.

f. **Complexity.**

(1) War is a complex phenomenon. Therefore, is not governed by the actions or decisions of a single individual in any one place but emerges from the collective behavior of all the individual parts in the system interacting locally in response to local conditions and incomplete information.

g. **The Human Dimension.**

(1) War is a clash between opposing human wills, the human dimension is central in war.

(2) It is the human dimension which infuses war with its intangible moral factors. War is shaped by human nature and is subject to the complexities, inconsistencies, and peculiarities which characterize human behavior. Since war is an act of violence based on irreconcilable disagreement, it will invariably inflame and be shaped by human emotions.

(3) No degree of technological development or scientific calculation will diminish the human dimension in war. Any doctrine which attempts to reduce warfare to ratios of forces, weapons, and equipment neglects the impact of the human will on the conduct of war and is therefore inherently flawed.

h. **Violence And Danger.**

(1) The means of war is force, applied in the form of organized violence. It is through the use of violence, or the credible threat of violence, that we compel our enemy to do our will.

(2) Violence is an essential element of war, and its immediate result is bloodshed, destruction, and suffering. While the magnitude of violence may vary with the object and means of war, the violent essence of war will never change.

(3) Since war is a violent enterprise, danger is ever present.

(4) Courage is not the absence of fear; rather, it is the strength to overcome fear.

(5) Strong leadership which earns the respect and trust of subordinates can limit the effects of fear. Leaders should develop unit cohesion and esprit and the self-confidence of individuals within the unit. In this environment, a Marine's unwillingness to violate the respect and trust of peers can overcome personal fear.

i. **Physical, Moral, And Mental Forces.**

(1) The physical characteristics of war are generally easily seen, understood, and measured: equipment capabilities, supplies, physical objectives seized, force ratios, losses of materiel or life, terrain lost or gained, prisoners or materiel captured.

(2) Moral forces are difficult to grasp and impossible to quantify. We cannot easily gauge forces like national and military resolve, national or individual conscience, emotion, fear, courage, morale, leadership, or esprit.

(3) Mental forces provide the ability to grasp complex battlefield situations; to make effective estimates, calculations, and decisions; to devise tactics and strategies; and to develop plans.

j. **The Evolution Of War.**

(1) War is both timeless and ever changing. While the basic nature of war is constant, the means and methods we use evolve continuously. Changes may be gradual in some cases and drastic in others. Drastic changes in war are the result of developments that dramatically upset the equilibrium of war such as the rifled bore, mass conscription, and the railroad.

(2) One major catalyst of change is the advancement of technology. As the hardware of war improves through technological development, so must the tactical, operational, and strategic usage adapt to its improved capabilities both to maximize our own capabilities and to counteract our enemy's.

k. **The Science, Art, And Dynamic Of War.**

(1) The science of war includes those activities directly subject to the laws of ballistics, mechanics, and like

disciplines; for example, the application of fires, the effects of weapons, and the rates and methods of movement and resupply.

(2) Art includes the creative, situational application of scientific knowledge through judgment and experience, and so the art of war subsumes the science of war. The art of war requires the intuitive ability to grasp the essence of a unique military situation and the creative ability to devise a practical solution. It involves conceiving strategies and tactics and developing plans of action to suit a given situation.

(3) The conduct of war is fundamentally a dynamic process of human competition requiring both the knowledge of science and the creativity of art but driven ultimately by the power of human will.

2. **THE THEORY OF WAR.**

a. **War As An Act Of Policy.**

(1) War is an extension of policy with military force. The policy aim that is the motive for war must also be the foremost determinant for the conduct of war. The single most important thought to understand about the theory is that war must serve a policy. Depending on the policies of the war will determine the shape of the war itself.

(2) When the policy motive of war is intense, such as the annihilation of an enemy, then policy and wars' natural military tendency toward destruction will coincide, and the war will appear more military and less political in nature. On the other hand, the less intense the policy motive, the more the military tendency toward destruction will be the variance with that motive, and the more political and less military the war will appear. The political aim of war is to achieve our will. In military terms, this means the defeat of the enemy's fighting forces, but always in a manner and to a degree consistent with the national policy objective.

b. **Means In War.** At the national level, war involves the use of all the elements of national power, including diplomacy, military force, economics, ideology, technology, and culture. Our primary concern is the use of military force as an instrument of policy. The use of military force may take any number of forms, from intense warfare with sophisticated weapons to mere demonstrations.

c. **The Spectrum Of Conflict.** Conflict can take a wide range of forms, constituting a spectrum that reflects the magnitude of violence involved. At one end are those conflicts of low intensity in which the application of military power is restrained and selective. The other end of the spectrum represents conflicts of high intensity, such as nuclear war. Low intensity conflicts are more probable than high intensity conflicts simply because many nations do not possess the military means to wage war at the high end of the spectrum. And, unless national survival is at stake, nations are generally unwilling to accept the risks associated with wars of high intensity. However, the intensity may change over time. Belligerents may escalate the level of violence if the original means do not achieve the desired result. The Marine Corps must be able to deal with the entire spectrum of conflict.

d. **Levels Of War.** War takes place on several correlated levels, each with differing means, characteristics, and requirements.

(1) **Strategic level.** The highest level. Activities at the strategic level focus directly on policy objectives. Strategy applies to peace as well as war. We distinguish between national strategy, which coordinates and focuses all the elements of national power to attain the policy objectives. Military strategy thus is subordinate to national strategy. Strategy involves establishing goals, assigning forces, providing assets, and imposing conditions on the use of force in theaters of war.

(2) **Operational level.** The link between strategic and tactical levels. It is the use of tactical results to attain strategic objectives. The operational level includes deciding when, where, and under what conditions to engage the enemy in battle-and when, where, and under what conditions to refuse battle in support of higher aims. As strategy deals with winning wars, and tactics deals with winning battles, the operational level deals with winning campaigns.

(3) **Tactical level.** The lowest level. Tactics refers to the concepts and methods used to accomplish a particular mission in either combat or other military operations. Tactics focuses on the application of combat power to defeat an enemy force in combat at a particular time and place. It includes the use of firepower and maneuver, the integration of different arms, and the immediate exploitation of success to defeat the enemy. The tactical level includes the technical application of

combat power, which consists of those techniques and procedures for accomplishing specific tasks within a tactical action. Tactics requires judgment and creativity while techniques and procedures, involves repetitive routine and muscle memory.

e. **Initiative And Response**. All actions in war, regardless of the level, are based upon either taking the initiative or reacting in response to the opponent. By taking the initiative, we dictate the terms of the conflict and force the enemy to meet us on our terms. The initiative allows us to pursue some positive aim even if only to preempt an enemy initiative. It is through the initiative that we seek to impose our will on the enemy. The initiative is clearly the preferred form of action because only through the initiative can we ultimately impose our will on the enemy. We must remember that at least one party to a conflict must take the initiative, for without the desire to impose upon the other there would be no conflict.

(1) This leads to a pair of related concepts: the offense and defense.

(a) The offense contributes striking power. We normally associate the offense with initiative: The most obvious way to seize and maintain the initiative is to strike first and keep striking.

(b) The defense, on the other hand, contributes resisting power, the ability to preserve and protect oneself. Thus the defense has a negative aim, of resisting the enemy's will. An effective defense must assume an offensive character, striking at the moment of the enemy's greatest vulnerability. The truly decisive element of the defense is the counterattack.

(c) This also brings us to the concept of the culminating point. Certain moral factors, such as morale or boldness, may increase with a successful attack, but these very often cannot compensate for the physical and sometimes moral strength, and so the attack becomes weaker over time. Eventually, we reach the culminating point at which we can no longer sustain the attack and must revert to the defense. It is precisely at this point that the defensive element of the offense is most vulnerable to the offensive element of the defense, the counterattack.

f. **Styles Of Warfare**. Just as there are two basic forms of combat, there are two essential components; fire and movement. Of all the countless activities in combat, we can distill them

to these. Although all warfare uses fire and movement, these components provide the foundation for two distinct styles of warfare: an attrition style, based on firepower, and a maneuver style, based on movement.

(1) Warfare by attrition seeks victory through the cumulative destruction of the enemy's material assets by superior firepower and technology. This style of warfare is very centralized in regards to command and control.

(2) Warfare by maneuver stems from the desire to circumvent a problem and attack it from a position of advantage rather than meet it head on. The goal is the application of strength against selected enemy weakness. By definition, maneuver relies on speed and surprise, for without either we cannot concentrate strength against selected enemy weakness.

g. **Combat Power**. Combat power is the total destructive force we can bring on our enemy at a given time. Some factors in combat power are quite tangible and easily measured, such as superior numbers: the most common element in victory. Some may be less easily measured, such as the effects of maneuver, tempo, or surprise; the advantages established by geography or climate; the relative strengths of the offense and defense; or the relative merits of striking the enemy in the front, flanks, or rear. Some may be intangible, such as morale, fighting spirit, perseverance, or the effects of leadership.

h. **Speed And Focus**. Of all the consistent patterns we can discern in war, there are two concepts of universal significance in generating combat power: speed and focus.

(1) Speed is rapidity of action. It applies to both time and space. It is relative speed that matters. Speed over time is tempo; the consistent ability to operate fast. Speed over distance is velocity; the ability to move fast. In other words speed is a weapon. Superior speed allows us to seize the initiative and dictate the terms of action, forcing the enemy to react to us. Speed provides security. It is a prerequisite for maneuver and for surprise.

(2) Focus is the convergence of effects in time and space on some objective. It is the generation of superior combat power at a particular time and place. Focus may achieve decisive local superiority for a numerically inferior force. We must focus effects not only at the decisive location but also at the decisive moment.

i. **Surprise And Boldness.** We must now acknowledge two additional considerations that are significant as multipliers of combat power: surprise and boldness.

(1) By surprise we mean a state of disorientation resulting from an unexpected event that degrades the enemy's ability to resist. We achieve surprise by striking the enemy at a time or place or in a manner for which he is unprepared. It is not essential that we take the enemy unaware, but only that he becomes aware too late to react effectively. There are three ways to achieve surprise:

(a) The first is through deception, which is to convince the enemy we are going to do something other than what we are really going to do in order to induce him to act in a manner prejudicial to his own interests.

(b) The second way is through ambiguity, which is to act in such a way, that the enemy does not know what to expect. Because he does not know what to expect, he must prepare for numerous possibilities and cannot prepare adequately for any one.

(c) The third is through stealth, which is to deny the enemy any knowledge of impending action.

(2) Boldness must be granted a certain power over and above successful calculations involving space, time, and magnitude of forces, for wherever it is superior, it will take advantage of its opponent's weakness.

j. **Centers Of Gravity And Critical Vulnerabilities.** We must concentrate combat power toward a decisive aim. There are two related concepts that help us to think about this: centers of gravity and critical vulnerabilities.

(1) Each belligerent is a complex system consisting of numerous physical, moral, and mental components as well as the relationships among them. Some of these factors are more important than others. Which factors are critical to the enemy? Which can the enemy not do without? Which, if eliminated, will bend him most quickly to our will? These are centers of gravity.

(2) We want to attack the source of enemy strength, but we do not want to attack directly into that strength. We obviously stand a better chance of success by concentrating our

strength against some relative enemy weakness. So we also ask ourselves: Where is the enemy vulnerable?

(3) Center of gravity and critical vulnerability are complementary concepts. The former looks at the problem of how to attack the enemy system from the perspective of seeking a source of strength, the latter from the perspective of seeking weakness. A critical vulnerability is a pathway to attacking a center of gravity.

k. **Creating And Exploiting Opportunity.** The commander must be prepared to react to the unexpected and to exploit opportunities created by conditions that develop from the initial action. By exploiting opportunities, we create, in increasing numbers, more opportunities for exploitation. It is often the ability and the willingness to ruthlessly exploit these opportunities that generate decisive results. The ability to take advantage of opportunity is a function of speed, flexibility, boldness, and initiative.

3. **PREPARING FOR WAR.**

a. **Force Planning.**

(1) The Marine Corps' force planning is concept-based. That is, all force planning derives from a common set of concepts which describe how Marine Corps forces will operate and perform certain key functions. These concepts describe the types of missions Marine forces are likely to be required to perform and how they might accomplish those missions.

(2) Force planning integrates all the efforts of the peacetime Marine Corps, including training, education, doctrine, organization, personnel management, and equipment acquisition. Unity of effort is as important during the preparation for war as it is during the conduct of war. This systematic process of identifying the objective and planning a course to obtain it applies to all areas and levels of preparations.

b. **Organization.**

(1) The operating forces must be organized to provide forward deployed or rapidly deployable forces capable of conducting expeditionary operations in any environment. This means that in addition to maintaining their unique amphibious capability, the operating forces must maintain the capability to deploy by whatever means is appropriate to the situation.

(2) Operating forces should be organized for warfighting and then adapted for peacetime rather than vice versa. Tables of organization should reflect the two central requirements of deplorability and the ability to task-organize according to specific situations. Units should be organized according to type only to the extent dictated by training, administrative, and logistic requirements.

c. **Doctrine.**

(1) Doctrine is a teaching of the fundamental beliefs of the Marine Corps on the subject of war, from its nature and theory to its preparation and conduct. Doctrine establishes a particular way of thinking about war and a way of fighting.

(2) It also provides a philosophy for leading Marines in combat, a mandate for professionalism, and a common language. In short, it establishes the way we practice our profession. In this manner, doctrine provides the basis for harmonious actions and mutual understanding.

d. **Professionalism.**

(1) As military professionals charged with the defense of the Nation, Marine leaders must be true experts in the conduct of war.

(2) The military profession is a thinking profession. Every Marine is expected to be a student of the art and science of war.

(3) Relations among all leaders should be based on honesty and frankness regardless of disparity between grades.

e. **Training.**

(1) Training is the key to combat effectiveness and therefore is the main effort of a peacetime military. However, training should not stop with the commencement of war; training must continue during war to adapt to the lessons of combat.

(2) All Marines, regardless of occupational specialty, will be trained in basic combat skills. At the same time, unit skills are extremely important.

(3) In order to develop initiative among junior leaders, the conduct of training—like combat—should be decentralized. Senior commanders influence training by establishing goals and

standards, communicating the intent of training, and establishing a main effort for training. As a rule, they should refrain from dictating how the training will be accomplished.

f. **Professional Military Education.**

(1) Professional military education is designed to develop creative, thinking leaders. At each stage, a Marine should be preparing for the subsequent stage.

(2) The responsibility for implementing professional military education in the Marine Corps is three-tiered.

(a) The education establishment consists of those schools—administered by the Marine Corps, subordinate commands, or outside agencies—established to provide formal education in the art and science of war.

(b) Commanders should see the development of their subordinates as a direct reflection on themselves.

(c) Every Marine has an individual responsibility to study the profession of arms.

g. **Personnel Management.**

(1) The personnel management system should seek to achieve personnel stability within units and staffs as a means of fostering cohesion, teamwork, and implicit understanding.

h. **Equipping.**

(1) Equipment should be easy to operate and maintain, reliable, and interoperable with other equipment. It should require minimal specialized operator training. Further, equipment should be designed so that its use is consistent with established doctrine and tactics.

(2) Equipment is useful only if it increases combat effectiveness.

(3) There are two dangers with respect to equipment: the overreliance on technology and the failure to make the most of technological capabilities.

4. THE CONDUCT OF WAR.

a. The Challenge.

(1) The challenge is to develop a concept of warfighting consistent with our understanding of the nature and theory of war and the realities of the modern battlefield.

b. Maneuver Warfare.

(1) Maneuver warfare is a warfighting philosophy that seeks to shatter the enemy's cohesion through a variety of rapid, focused, and unexpected actions which create a turbulent and rapidly deteriorating situation with which the enemy cannot cope.

c. Orienting On The Enemy.

(1) Orienting on the enemy is fundamental to maneuver warfare. Maneuver warfare attacks the enemy "system." The enemy system is whatever constitutes the entity confronting us within our particular sphere.

(2) We should try to "get inside" the enemy's thought processes and see the enemy as he sees himself so that we can set him up for defeat. It is essential that we understand the enemy on his own terms. We should not assume that every enemy thinks as we do, fights as we do, or has the same values or objectives.

d. Philosophy Of Command.

(1) It is essential that our philosophy of command support the way we fight. First and foremost, in order to generate the tempo of operations we desire and to best cope with the uncertainly, disorder, and fluidity of combat, command and control must be decentralized.

(2) Our philosophy of command must also exploit the human ability to communicate implicitly. We believe that implicit communication—to communicate through mutual understanding, using a minimum of key, well-understood phrases or even anticipating each other's thoughts—is a faster, more effective way to communicate than through the use of detailed, explicit instructions. We develop this ability through familiarity and trust, which are based on a shared philosophy and shared experiences.

(3) We must remember that command from the front should not equate to over supervision of subordinates.

e. **Shaping The Action.**

(1) Identify those critical enemy vulnerabilities that we believe will lead most directly to undermining the enemy's centers of gravity and the accomplishment of our mission.

(2) Attempt to shape the general conditions of war. This shaping consists of lethal and nonlethal actions that span the spectrum from direct attack to psychological operations, from electronic warfare to the stockpiling of critical supplies for future operations. Shaping activities may render the enemy vulnerable to attack, facilitate maneuver of friendly forces, and dictate the time and place for decisive battle.

(3) Through shaping, commanders gain the initiative, preserve momentum, and control the tempo of operations. We should also try to shape events in a way that allows us several options so that by the time the moment for decisive operations arrives, we have not restricted ourselves to only one course of action.

f. **Decisionmaking.**

(1) Decisionmaking is essential to the conduct of war since all actions are the result of decisions or of non-decisions. If we fail to make a decision out of lack of will, we have willingly surrendered the initiative to our foe. If we consciously postpone taking action for some reason, that is a decision. Thus, as a basis for action, any decision is generally better than no decision.

(2) We should base our decisions on awareness rather than on mechanical habit. We must have the moral courage to make tough decisions in the face of uncertainty—and to accept full responsibility for those decisions—when the natural inclination would be to postpone the decision pending more complete information.

(3) Since all decisions must be made in the face of uncertainty and since every situation is unique, there is no perfect solution to any battlefield problem. Therefore, we should not agonize over one. The essence of the problem is to select a promising course of action with an acceptable degree of risk and to do it more quickly than our foe. In this respect,

"a good plan violently executed now is better than a perfect plan executed next week."

g. **Mission Tactics.**

(1) Mission tactics is the tactics of assigning a subordinate mission without specifying how the mission must be accomplished.

(2) The manner of accomplishing the mission is left to the subordinate, thereby allowing the freedom—and establishing the duty—for the subordinate to take whatever steps deemed necessary based on the situation.

(3) Mission tactics benefits the senior commander by freeing time to focus on higher-level concerns rather than the details of subordinate execution.

h. **Commander's Intent.**

(1) Commander's intent, a device designed to help subordinates understand the larger context of their actions. The purpose of providing intent is to allow subordinates to exercise judgment and initiative—to depart from the original plan when the unforeseen occurs—in a way that is consistent with higher commanders' aims.

(2) There are two parts to any mission: the task to be accomplished and the reason or intent behind it.

(3) It is often possible to capture intent in a simple ". . . in order to . . ." phrase following the assigned task.

i. **Main Effort.**

(1) The unit assigned responsibility for accomplishing a key mission is designated as the **main effort** — the focal point upon which converges the combat power of the force.

(2) The main effort receives priority for support of any kind.

(3) Each commander should establish a main effort for each operation. As the situation changes, the commander may shift the main effort, redirecting the weight of combat power in support of the unit that is now most critical to success. In general, when shifting the main effort, we seek to exploit success rather than reinforce failure.

j. **Surfaces And Gaps.**

(1) Surfaces are hard spots=enemy strengths.

(2) Gaps are soft spots=enemy weaknesses.

(3) We avoid enemy strength and focus our efforts against enemy weakness.

(4) A surface may be an actual strongpoint, or it may be any enemy strength: a moment when the enemy has just replenished and consolidated a position or a technological superiority of a particular weapons system or capability.

(5) Gaps may be physical gaps in the enemy's dispositions, but they may also be any weakness in time, space, or capability: a moment in time when the enemy is overexposed and vulnerable, a seam in an air defense umbrella, an infantry unit caught unprepared in open terrain, or a boundary between two units.

k. **Combined Arms.**

(1) Combined arms is the full integration of arms in such a way that to counteract one, the enemy must become more vulnerable to another. We pose the enemy not just with a problem, but with a dilemma—a no win situation.

(2) We accomplish combined arms through the tactics and techniques we use at the lower levels and through task organization at higher levels. In so doing, we take advantage of the complementary characteristics of different types of units and enhance our mobility and firepower.

PERFORMANCE EXAMINATION CHECKLIST

MCCS-LDR-1009

With the aid of references, embody the Marine Corps philosophy of warfighting by applying the tenants to dictate an approach to duty, in war, in crisis, and in peace.

Student Instructions:

1. You are a Marine and must embody the Marine Corps philosophy of warfighting.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and embody the Marine Corps philosophy of warfighting by applying the tenants to dictate an approach to duty, in war, in crisis, and in peace.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Define the nature of war.			
2. Define the theory of war.			
3. Describe the actions taken to prepare for war.			
4. Define the conduct of war.			
5. Describe how to integrate the theory of war with personal plans and actions.			

REFERENCES:

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
MCDP 1	Warfighting	Entire Publication

NOTES:

STUDENT OUTLINE

STRESSES OF COMBAT

MCT0102

10/09/2019

LEARNING OBJECTIVE FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) Without the aid of references, describe stresses of combat without omitting key components. (MCCS-LDR-1010)

STUDENT INFORMATION

OVERVIEW: The purpose of this guided discussion is to provide you with the knowledge necessary to identify and cope with Stresses that are experienced with Combat. We will do this by covering: What is Combat, Stresses in Combat, Risks of Combat, and the Human Dimension.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. DEFINE COMBAT.

For our purposes, combat will be defined as engaging the enemy with individual or crew served weapons; being exposed to direct or indirect enemy fire; and otherwise undergoing a high probability of direct contact with enemy personnel and firepower, to include the risk of capture.

2. STRESSES IN COMBAT. (MCCS-LDR-1010)

The combat environment varies for Marines depending upon MOS, duties, tactics, type of conflict, etc. Some common elements found in the combat environment are:

a. Stresses In Combat.

- (1) Confusion and lack of information.
- (2) Casualties.

- (3) Violent, unnerving sights and sounds.
- (4) Feelings of isolation.
- (5) Communication breakdowns.
- (6) Individual discomfort and fatigue.
- (7) Fear, stress, and mental fatigue.
- (8) Continuous operations.
- (9) Homesickness.

3. **RISKS OF COMBAT.**

a. The combat environment is characterized by long periods of routine activity that tend to create a false feeling of security. When combat actually occurs, it is frequently sudden, unexpected, and characterized by extremely violent action, savage behavior and intense danger. Everyone on the battlefield, including headquarters and service support personnel, must be prepared for combat at any time.

b. By its nature, uncertainty invariably involves the estimation and acceptance of risk. Risk is inherent in war and is involved in every mission. Risk is equally common to action and inaction. Risk may be related to gain; greater potential gain often requires greater risk. The practice of concentrating combat power toward the main effort

c. **Risks Found In Combat.**

- (1) Extreme risk and fear.
- (2) The "fog of war."
- (3) Discomfort and fatigue.
- (4) Casualties.
- (5) Boredom.

4. **Fear In Combat.**

a. **Sources Of Fear In Combat.**

(1) The possibility of being killed, wounded, or captured is always present.

(2) The noise and sights of combat have a traumatic, shocking impact upon the senses, causing confusion, and a sense of chaos that may become particularly unnerving.

(3) The apprehension that you might not "measure up" as a Marine under fire or let your buddies down.

(4) Anticipation of the unexpected; constant anxiety about the enemy's location, strength, or intentions. Knowledge that if the enemy succeeds in creating a situation which was totally unexpected, he may have a decisive advantage. This is the element of "surprise" in reverse.

(5) Fatigue itself is a source of fear. As individuals become physically exhausted, they may begin to perceive themselves to be helpless or unable to continue to fight. Air crews experiencing fatigue may begin to make critical mistakes in maintenance procedures or may begin overextending their own capabilities and that of their aircraft.

(6) Extreme fear brings out our instinct for self-preservation. Survival is clearly a very strong motivation and will generally be a priority concern. In combat, killing the enemy helps remove that threat to your life. The alternative of not killing the enemy increases the likelihood that he will kill you.

(7) Physically, the body reacts when threatened or there is anticipation of danger.

(8) Some other physiological reactions are:

(a) Trembling.

(b) Pounding heart.

(c) Irrational laughter.

(d) Sweating.

(9) Psychological reactions might include:

- (a) Inability to make decisions.
- (b) Over-fixation with minor details.
- (c) Displaying lack of confidence.

b. **The Unexpected.**

(1) Whenever the enemy actions appear as a surprise it will have a powerful impact upon your Marines. Being surprised by the enemy has been described as causing the "will that controls fear to sag and crumble." At such moments leaders must exert a strong influence upon their Marines to maintain control over the unit's actions.

c. **The Unknown.**

(1) There is a tendency to think that the enemy is much greater in strength or ability than he really may be. Do not allow yourself to be deceived as to enemy strength or capabilities through exaggerated impressions.

(2) Regardless of how well you or your Marines are trained for combat, the first shock of realizing that the enemy actually intends to kill you is a powerful factor everyone will have to face. Until this threshold is crossed and your Marines become accustomed to functioning under fire, the leader must act decisively to ignite the confidence and individual actions that will transform fear into an aggressive unit response.

(3) The presence of a leader has tremendous value in overcoming fear, particularly at night, in adverse weather, or during lulls in the action when everyone's imagination runs wild and Marines think they may be alone or isolated.

(4) A feeling of helplessness. It is the leader who must prevent this from taking hold. The leader must act to direct and inspire the response against the enemy. Everyone has a job that must be accomplished and it is the leader who must see that everyone is doing what must be done. Action is a key to preventing this feeling of helplessness from taking hold. Keep your Marines engaged. Read or tell the story of the following excerpt from Guadalcanal Diary to make the point that the timely, reassuring presence of a leader is of immeasurable value to combatants.

(5) Another attribute of war is uncertainty. We might argue that uncertainty is just one of many sources of friction, but because it is such a pervasive trait of war, we will treat it singly. All actions in war take place in an atmosphere of uncertainty, or the "fog of war." Uncertainty pervades battle in the form of unknowns about the enemy, about the environment, and even about the friendly situation. While we try to reduce these unknowns by gathering information, we must realize that we cannot eliminate them—or even come close. The very nature of war makes certainty impossible; all actions in war will be based on incomplete, inaccurate, or even contradictory information.

5. Overcoming Fear In Combat.

a. Identity. Our identity as Marines conveys a special meaning to our fellow Marines; one Marine will not let another Marine down. The "felt" presence of another Marine who is counting on you to do a particular job is usually sufficient to overcome most fears.

b. Discipline. Everyone is afraid in combat, but this fear has to be controlled so that the job can get done. All Marines must have the will power to force fear out of their minds or to overcome it and replace it with action. Concentrate on your job and actively support your fellow Marines. Everything we do as Marines reflects on the quality of our discipline, something we recognize as essential to success in combat.

c. Esprit De Corps. We are a Brotherhood of Marines. Fierce pride in our Corps and our unit is a source often during strength. "The Few, The Proud, The Marines" is more than a recruiting slogan; it's a way of life.

d. Tradition. We fight and win. Every Marine must have knowledge of and pride in our history and traditional values. We will do no less than the Marines who have come before us.

e. Training. Training develops confidence in our leadership, our fellow Marines, and ourselves. It builds morale, discipline, esprit, pride, and develops physical stamina and teamwork.

6. Discomfort In Combat.

a. Admittedly, discomfort is probably the least of a Marine's concerns when actually engaged in combat. However, the degree to which he/she has been adversely affected by being wet,

cold, hungry, thirsty, or weary does have an effect on how well he/she can respond to the enemy. Marines tend to develop a high tolerance for enduring the extremes of weather and making do without much support; however, there is a point where morale begins to be affected and a unit's actual ability to fight becomes questionable. It is essential that the leader take care of his/her Marines, and at the first opportunity, provide for dry clothing, protection from the cold, food, or water.

b. Extreme reaction to fear occurs when the individual confronts a situation where death appears to be imminent. During such instances two basic forms of behavior have been observed.

7. **Fatigue In Combat.**

a. As he/she becomes increasingly tired, he/she may lose the ability to make decisions rapidly, and may become more easily confused, disoriented, and ultimately ineffective.

b. Some Indicators of Fatigue are:

(1) Reckless disregard for the safety of the individual or the safety of fellow Marines.

(2) Excessive caution or unwillingness to expose oneself to even the slightest risk.

(3) Failure to fire weapons.

(4) Lack of concern for the cleanliness of weapons, the condition of vehicles, or other essential equipment.

(5) Lack of attention to aircraft maintenance/flight procedures.

(6) Lack of concern for personal cleanliness; refusal to shave, wash, eat, or drink.

8. **Casualties In Combat.**

a. Experiencing a Casualty. Seeing a fellow Marine go down has traumatic impact upon the individual. Combat is a brutal event and casualties are to be expected. The shock of seeing buddies wounded or killed, and the possibility that it may happen to one's self adds to the fear and apprehension of survivors; it increases the reluctance to take risks and obey

the leader. How individuals respond after they take casualties is a key indicator of the effectiveness of their training, self-discipline, and preparation for combat.

b. Properly Responding to a Casualty.

(1) Proper care for your wounded has a great effect upon morale. Every Marine must be assured that if he is hit, his fellow Marines will take care of him. There is an unwritten contract among Marines that if wounded and unable to fend for oneself, another Marine will come to one's aid and do all he/she can to help.

(2) During the assault, Marines cannot stop to aid a fallen buddy, and each Marine must know this. Casualties are the job of the corpsman. This is the reason corpsmen are not armed with rifles or machine guns. It is their job to look after the wounded, not to fight. Most corpsmen are "gung-ho" and many want to employ weapons other than their T/O 9mm pistol; this should not be allowed as they may tend to fire rather than take care of the wounded.

(3) At the very first opportunity, casualties should be looked after by their leaders and comrades. Every Marine must be accounted for. Dead and wounded are removed from the combat area as soon as possible.

c. Effects of not properly responding to casualties.

(1) The presence of dead and wounded for a prolonged period of time hurts the morale of survivors. It is important to always care for casualties and impart confidence that whatever the cost, your fellow Marines will do all that can be done under the circumstances. If combat prevents the prompt evacuation of casualties, they should be moved to a position of relative safety and receive care until they can be evacuated.

(2) Another important task of the leader occurs after the casualties have been evacuated. At the first opportunity, communicate with the next of kin. It is also reassuring to the surviving members of the unit to know that they will not be forgotten.

PERFORMANCE EXAMINATION CHECKLIST

MCCS-LDR-1010

Without the aid of references, describe stresses of combat without omitting key components.

Student Instructions:

1. You are a Marine and must describe stresses of combat.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and describe stresses of combat without omitting key components.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Define combat.			
a. Describe combat.			
2. Identify elements encountered in a combat environment.			
3. State the risks of combat.			
4. Describe the effects of extreme risk.			
5. Describe the effects of extreme fear.			
6. Describe the effects of the "Fog of War."			
7. Describe the effects of discomfort.			
8. Describe the effects of fatigue.			
9. Describe the effects of casualties.			
10. Describe the effects of boredom.			

REFERENCES:

NUMBER	TITLE	CHAPTER/PAGE
MCTP 6-10B	Marine Corps Values: A User's Guide for Discussion Leaders	21-4 through 21-16
MCDP 1	Warfighting	8

NOTES:

STUDENT OUTLINE

MARINE CORPS VALUES

MCT0103

06/27/2019

LEARNING OBJECTIVE FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) Without the aid of references, embody Marine Corps values to consistently represent the highest moral character in and out of uniform. (MCCS-VALU-1001)

STUDENT INFORMATION

OVERVIEW: The purpose of this period of instruction is to introduce you to our core values and provide you with a common set of values to which every Marine adheres. This lesson will cover Marine Corps Core Values. This lesson relates to every decision you will ever make as a Marine.

CLASS PREPARATION: Read this outline prior to class and be ready to actively participate in the guided discussion.

OUTLINE.

1. MARINE CORPS CORE VALUES. (MCT-VALU-1001)

What are the Marine Corps Core Values? Honor, Courage and Commitment. Our 30th Commandant, General Mundy, wrote this describing our Core Values and why they are important. *"Generation after generation of American men and women have given special meaning to the term United States Marine. They have done so by their performance on and off the battlefield. Feared by enemies, respected by allies, and loved by the American people, Marines are a "special breed". This reputation was gained and is maintained by a set of enduring Core Values. These values form the cornerstone, the bedrock, and the heart of our character. They are the guiding beliefs and principles that give us strength, influence our attitudes, and regulate our behavior. They bond our Marine Family into a total force that can meet any challenge".* This is why it is important for us to

discuss our Core Values and for all of us to understand what it means to live by our Core Values.

a. **Honor**. The Marine Corps is a unique institution, not just to the military, but to the nation and the world. As the guardians of the standards of excellence for our society, Marines must possess the highest sense of gallantry in serving the United States of America and embody responsibility to duty above self. We will now discuss the different facets of honor.

(1) Integrity: Demonstrating the highest standards of consistent adherence to right, legal and ethical conduct.

(2) Responsibility: Personally accepting the consequences for decisions and actions. Coaching the correct decisions of subordinates. One Marine taking responsibility for a situation may save the day.

(3) Honesty: Telling the truth. Overt honesty in word and action, and clarifying possible misunderstanding or misrepresentation caused by silence or inaction when you should speak up. Respecting other's property and demonstrating fairness in all actions. Marines do not lie, cheat, or steal.

(4) Tradition: Demonstrating respect for the customs, courtesies, and traditions developed over many years for good reason, which produce a common Marine Corps history and identity. Respect for the heritage and traditions of others, especially those we encounter in duty around the world.

b. **Courage**. Courage is the moral, mental, and physical strength to resist opposition, face danger, and endure hardship. We will now discuss the different aspects of courage.

(1) Self-Discipline. Marines hold themselves responsible for their own actions and others responsible for their actions. Marines are committed to maintaining physical, moral, and mental health, to fitness and exercise, and to lifelong learning.

(2) Patriotism. Devotion to and defense of one's country. The freely chosen, informed willingness to support and defend the Constitution of the United States.

(3) Loyalty. Steady reliability to do one's duty in service to the United States of America, the United States

Marine Corps, one's command, one's fellow Marines, Sailors, Soldiers, Airmen, citizens, oneself, and to family.

(4) Valor. Boldness and determination in facing danger in battle, and the daily commitment to excellence and honesty in actions small and large.

c. Commitment. Commitment is the promise or pledge to complete a worthy goal by worthy means which requires identification with that goal and demonstrated actions to support that goal. We will explore the different aspects of commitment.

(1) Competence. Maintaining, and improving one's skill level to support the team. Commitment to growing toward a standard of excellence that is second to none.

(2) Teamwork. Individual effort in support of other team members in accomplishing the team's mission. Marines take care of their own. All worthwhile accomplishments are the result of a team effort.

(3) Selflessness. Marines take care of their subordinates, their families, their fellow Marines before themselves. The welfare of our country and our Corps is more important than our individual welfare.

(4) Concern for People. The Marine Corps is the custodian of this nation's future, her young people. We exist to defend the nation, but as importantly, we are in the business of creating honorable citizens. Everyone is of value, regardless of race, nation of origin, religion, or gender. Concern includes a commitment to improving the level of education, skill, self-esteem, and quality of life for Marines and their families. On the battlefield, a Marine is the fiercest of all warriors and the most benevolent of conquerors.

(5) Spiritual Heritage. The U.S. Constitution, the Pledge of Allegiance, and the creeds that guide our nation recognize the value of religious and spiritual heritage of individuals and base our understanding of rights and duties on the endowment of all people, by God, with the inalienable rights of life, liberty, and the pursuit of happiness. Marines maintain spiritual health and growth to nurture enduring values and acquire a source of strength required for success in battle and the ability to endure hardship.

PERFORMANCE EXAMINATION CHECKLIST

MCCS-VALU-1001

Without the aid of references, embody Marine Corps values to consistently represent the highest moral character in and out of uniform.

Student Instructions:

1. You are a Marine and must embody Marine Corps values.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and embody Marine Corps values to consistently represent the highest moral character in and out of uniform.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Practice an ethical mindset.			
a. Describe ethical traits considered particularly important to the military?			
2. Apply critical thinking, mindful of unintentional bias.			
a. Explain what a bias is.			
3. Decide on a course of action.			
a. Explain how to demonstrate moral character when deciding on a course of action?			
4. Execute the course of action.			
a. Explain how to demonstrate ethics when executing a course of action?			
5. Evaluate results of action taken.			
a. Has my course of action met the objective?			
6. Reassess the situation, as required.			
a. What steps should you take to reassess a course of action?			

REFERENCES :

NUMBER	TITLE	PAGE
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MCTP 6-10B	Marine Corps Values: A User's Guide for Discussion Leaders	Entire Manual
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STUDENT OUTLINE

BEHAVIORAL HEALTH

MCT0104

10/9/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given an individual exhibiting at risk behavior, execute immediate actions to prevent suicide to maintain the readiness of both the individual Marine and the unit. (MCCS-BH-1001)

(2) Without the aid of references, given any situation, describe the Marine Corps policy on domestic violence/abuse and child abuse & maltreatment without omitting key components. (MCCS-BH-1002)

STUDENT INFORMATION

OVERVIEW: The purpose of this period of instruction is to introduce you to tools that will aid you in the identification and prevention of suicide. We will also discuss combatting and reporting domestic violence. This lesson relates to every decision you will ever make as a Marine.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. SUICIDE PREVENTION. (MCCS-BH-1001)

Incidences of suicide occur within all ranks, both genders, and across all races. Suicides occur throughout the year, and contrary to popular belief, suicides do not spike during the holiday seasons. Even while we are at war, suicide has become the 3rd leading cause of death in the Marine Corps.

a. Risk Factors Committing Suicide.

(1) Depression, anxiety, or personality disorders.

- (2) Alcohol or drug.
- (3) Impulsive and/ or aggressive tendencies.
- (4) History of trauma or abuse.
- (5) Physical illness or work related problem.
- (6) Previous suicide attempt.
- (7) Family history of suicide.
- (8) Easy access to lethal means.
- (9) Sense of isolation.
- (10) Problems with a close personal relationship.

b. **Warning Signs Of Suicide.**

- (1) Feeling hopeless or trapped, like there's no way out.
- (2) Having increased anxiety, agitation, sleeplessness, mood swings.
- (3) Feeling like there is no reason to live.
- (4) Experiencing increasing rage or anger.
- (5) Engaging in risky activities without thinking.
- (6) Having increased alcohol or drug use.
- (7) Withdrawing from family and friends.
- (8) Feeling overwhelming guilt or shame.
- (9) Threatening to hurt or kill yourself.
- (10) Talking or writing about death, dying or suicide.

c. **Protective Factors.**

- (1) Positive attitude.
- (2) Healthy relationships.
- (3) Nutrition.

- (4) Adequate Sleep.
- (5) Exercise.
- (6) Sense of humor.
- (7) Responsibility.
- (8) Accountability.
- (9) Good decision-making skills.
- (10) Trusted leaders.
- (11) Rules and Structure.
- (12) Mission Focus.
- (13) Avoid Alcohol and drugs.

d. **Immediate Response To A Suicide Threat.**

- (1) Be attentive to both words and emotions.
- (2) Repeat back what was said in their own words.
- (3) Share your concern for the person at risk.
- (4) Ask direct open-ended questions.
- (5) Ask directly about suicide.
- (6) Be non-judgemental.

e. **Acronym R.A.C.E.**

- (1) Recognize the signs of distress.
- (2) Ask the questions.
- (3) Care about fellow Marines.
- (4) Escort to help.

2. **DOMESTIC ABUSE/VIOLENCE.** (MCCS-BH-1002)

a. Domestic abuse/violence is defined as a pattern of intimidating behavior used to establish power and control over another person, usually the intimate partner.

b. Four Categories.

(1) Physical violence.

(2) Sexual violence.

(3) Psychological/Emotional violence.

(4) Threats of violence.

c. **Child Abuse/Maltreatment.** Defined as the physical or sexual abuse, emotional abuse, or neglect of a child by a parent, guardian, foster parent or care giver.

(1) Involves any non-accidental injury to a child.

(2) Injury could result from a single incident or of repeated episodes.

(3) Can be physical abuse, emotional abuse or neglect.

(4) Any injury resulting from punishment is not. Accidental.

(5) Any death resulting from punishment is murder.

d. **Contributing Factors Leading To Domestic/Child Abuse.**

(1) Personality characteristics and psychological well-being.

(2) Personal history of abuse, maltreatment, neglect or violence.

(3) Substance abuse.

(4) Poverty.

(5) Anger/Stress.

(6) Depression.

PERFORMANCE EXAMINATION CHECKLIST

MCCS-BH-1001

Given an individual exhibiting at risk behavior, execute immediate actions to prevent suicide to maintain the readiness of both the individual Marine and the unit.

Student Instructions:

1. You are a Marine and must execute immediate actions.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and prevent suicide to maintain the readiness of both the individual Marine and the unit.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Recognize warning signs. (MCCS-BH-1001a)			
What warning signs are associated with suicide?			
Answer:			
a. Talking about wanting to die or to kill themselves.			
b. Looking for a way to kill themselves, like searching online or buying a gun.			
c. Talking about feeling hopeless or having no reason to live.			
d. Talking about feeling trapped or in unbearable pain.			
e. Talking about being a burden to others.			
f. Increasing the use of alcohol or drugs.			
g. Acting anxious or agitated; behaving recklessly.			
h. Sleeping too little or too much.			
i. Withdrawing or isolating themselves.			
j. Showing rage or talking about seeking revenge.			
k. Extreme mood swing.			
2. Take action to mitigate risk.			
What actions would you take to mitigate risk?			
Answer:			

a. Be direct. Talk openly and matter-of-factly about suicide			
b. Take action. Remove means, like weapons or pills.			
3. Show at risk individual you care.			
a. Be willing to listen. Allow expressions of feelings. Accept the feelings.			
b. Be non-judgmental. Don't debate whether suicide is right or wrong, or whether feelings are good or bad. Don't lecture on the value of life.			
c. Get involved. Become available. Show interest and support.			
4. Escort to higher-level resources. (MCCS-BH-1001b)			
What higher level resource are available for at risk individuals?			
Answer:			
a. National Suicide Prevention Lifeline.			
b. Veterans Crisis Line.			
c. Chaplain.			

MCCS-BH-1002

Without the aid of references, given any situation, describe the Marine Corps policy on domestic violence/abuse and child abuse & maltreatment without omitting key components.

Student Instructions:

1. You are a Marine and must describe the Marine Corps policy on domestic violence/abuse and child abuse & maltreatment.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and describe the Marine Corps policy on domestic violence/abuse and child abuse & maltreatment without omitting key components.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Recognize contributing factors to domestic violence/abuse and child abuse & maltreatment. (MCCS-BH-1002a)			

What are contributing factors for domestic abuse?			
Answer:			
a. Temperamental attitude.			
b. Substance abuse.			
c. Witnessing family violence.			
d. Gender ideology.			
What are contributing factors for child abuse?			
Answers:			
a. Low Self-esteem.			
b. Stress.			
c. Financial problems.			
d. Lack of parenting skills.			
e. Social isolation.			
f. Relationship issues with partner.			
2. List the four categories of child abuse & maltreatment			
What are the four categories of child abuse & maltreatment?			
Answers:			
a. Physical abuse.			
b. Sexual abuse.			
c. Emotional abuse.			
d. Child neglect.			
3. List the four categories of domestic abuse.			
What are the categories of domestic abuse?			
Answers:			
a. Physical abuse.			
b. Sexual abuse and coercion.			
c. Emotional abuse.			
d. Reproductive coercion.			
e. Financial abuse.			
f. Digital abuse.			
4. Describe the impact of domestic and child abuse on individual Marines and units.			
Describe the impact domestic and child abuse on individual Marines and units?			
Answers:			
Family member abuse or any type of abuse will not be tolerated by the Department of			

Defense (DOD) or any of the Military Services. In addition to the pain it causes the family, it also diminishes military performance, impacts readiness, and is contrary to military values.			
5. List the resources for referral of domestic violence/abuse and child abuse & maltreatment warning signs.			
What are some resources for referral of domestic violence/abuse and child abuse & maltreatment warning signs?			
Answers:			
a. Family advocacy program.			
b. Military One Source.			
c. Families Overcoming Under Stress (FOCUS).			
d. Marine Corps Community Services (MCCS).			
6. Describe your role in prevention and intervention of domestic violence/abuse and child abuse & maltreatment. (MCCS-BH-1002b)			
Describe individual actions when domestic abuse and child abuse occurs.			
Answers:			
a. Command Notification.			
b. Family Advocacy Program Report.			
c. Contact Local Law Enforcement (PMO/MCPD/City PD).			
Describe the two types of reporting options for domestic abuse and child abuse.			
Answers:			
a. Restricted.			
b. Unrestricted.			

REFERENCES :

<u>PUBLICATION ID</u>	<u>TITLE</u>	<u>CHAPTER/PAGE</u>
DODI 6400.06	Domestic Abuse Involving DOD Military and Certain Affiliated Personnel	Entire Instruction
DODI 6400.01	Family Advocacy Program (FAP)	Entire Instruction

DoD 6400.01, Vol 1	Family Advocacy Program (FAP): FAP Standards	Entire Instruction
DoD 6400.1-M-1	Manual for Child Maltreatment and Domestic Abuse Incident Reporting System	Entire Instruction
MCO 1754.11	Marine Corps Family Advocacy and General Counseling Program	Entire Instruction
suicidepreventionlifeline.org	National Suicide Prevention Lifeline	Entire Instruction

NOTES :

STUDENT OUTLINE

PHYSICAL FITNESS

MCT0106

10/10/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given any mission and environment throughout a Marine's career, maintain habits associated with a healthy lifestyle to optimize physical and mental performance in order to build and maintain resiliency. (MCCS-COND-1001)

(2) Given references and a unit physical fitness and combat conditioning program, maintain physical fitness to condition for the rigors of combat operations. (MCCS-COND-1002)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify sources of nutrition for optimal performance in accordance with Human Performance Resource website. (MCCS-COND-1001a)

(2) Given a list of choices, identify resources to fuel for performance in accordance with Human Performance Resource website. (MCCS-COND-1001b)

(3) Given a list of choices, identify factors to mitigate fatigue in accordance with MCTP 3-30E. (MCCS-COND-1001c)

(4) Given a list of choices, identify characteristics associated with a dynamic warm up in accordance MCRP 8-10B.4. (MCCS-COND-1002a)

(5) Given a list of choices, identify the characteristics associated with a cool down exercise in accordance with MCRP 8-10B.4. (MCCS-COND-1002b)

(6) Given the requirement, develop an individual physical fitness plan in an accordance with MCRP 8-10B.4. (MCCSCOND-1002c)

(7) Given the requirement, consult with appropriate physical fitness personnel in accordance with MCO 6100.14. (MCCS-COND-1002d)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to introduce information about healthy lifestyle choices that can lead to developing personal and professional eating and exercise habits that will enable you to maintain a peak physical fitness level and a mission ready lifestyle. I will do this by covering Proper Nutrition, Resources to Fuel Performance, Mitigating Fatigue, the Mission Ready Lifestyle, Dynamic Warmups, Benefits of Force Fitness, Cool Down, and Maintaining Physical Fitness. This lesson directly relates to conditioning hikes, exercises, and the combat conditioning you will do here at Marine Combat Training Battalion, and throughout your Marine Corps Career.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **PROPER NUTRITION.** (MCCS-COND-1001a)

Fueling your body with the proper nutrients is one of the most important aspects of overall health and fitness. Without proper nutrition, the body lacks the essential building blocks it needs to repair, and refuel before, during, and after activities. To fully understand proper nutrition, Marines must become familiar with and understand common terminology, processes, and individual needs that will help them to improve.

a. **Calorie.** Unit of (heat) energy available from the metabolism of food that is required to sustain the body's various functions, including metabolic processes and physical activity. Carbohydrate, fat, protein, and alcohol provides all the energy supplied by foods and beverages. You may see Calories abbreviated as "kcal" on food nutrition labels.

b. **Calorie Balance/Energy Balance.** The balance between calories consumed through eating and drinking and those expended through physical activity and metabolic processes is known as Calorie Balance, or Energy Balance.

c. **Metabolic Processes.** Every process that occurs in the human body requires some amount of energy; from moving, to

thinking, to growing. The metabolic process is converting the fuel in the food we eat into the energy needed to power everything that we do. A certain caloric intake (which varies from person to person) is required to maintain energy. A spike in physical activity without a change in calories will result in weight loss. A spike in caloric intake without a change in physical activity will result in weight gain.

d. **Understanding Calorie Needs.** The total number of calories a person needs each day varies, depending on several factors including; the person's age, gender, height, weight, and level of physical activity. In addition, a desire to lose, maintain, or gain weight affects how many calories should be consumed. The calories needed for the average active human being is between 1,800-2,200 calories per day.

e. **Excessive Quantities Of Food.** The current dietary intake of Americans has contributed to the obesity epidemic. Many children and adults have a usual calorie intake that exceeds their daily needs, and they are not physically active enough to compensate for these intakes. The combination sets them on a track to gain weight. All age, gender and physical activity level groups have different caloric needs and require different quantities of food.

f. **Calorie Totals For Food.** There are numerous ways to find out calorie totals in food including the Internet, books, and recipes. The easiest way to find out calorie and nutrient totals is to read the Nutrition Facts Label on food packaging.

(1) **Nutrition Facts Label.**

(a) The Nutrition Facts Label, provides the number of calories that are in a serving of food and the number of servings that are in a package (e.g., can or box). This information can be used to determine how many calories are being consumed, in reference to the amount of servings eaten, listed on the Nutrition Facts Label. For example, if a package contains two servings and the entire package is consumed, then twice the calories and nutrients listed in the Nutrition Facts label are being consumed.

(b) The Nutrition Facts Label also provides information on the amount (i.e., grams [g] or milligrams [mg]) per serving of dietary fiber, as well as the amount of certain nutrients that should be limited in the diet, including saturated fat, *trans* fat, cholesterol, and sodium. It is

mandatory for this information to be provided on the Nutrition Facts Label.

(c) The label also provides the percent Daily Value for these nutrients (except *trans*-fat and sugars) and several shortfall nutrients, including dietary fiber and calcium. The Daily Value is based on a reference intake level that should be consumed or should not be exceeded. The percent Daily Value can be used to determine whether a serving of a food contributes a lot or a little of a nutrient and provides information on how a serving of the food fits in the context of a total daily diet. The higher the percent Daily Value, the more that serving of food contributes to an individual's intake of a specific nutrient. Foods that are "low" in a nutrient generally contain less than 5 percent of the Daily Value. Foods that are a "good" source of a nutrient, generally contain 10 to 19 percent of the Daily Value per serving. Foods that are "high", "rich", or are an "excellent" source of a nutrient generally contain 20 percent or more of the Daily Value per serving.

(d) The footnote at the bottom of the Nutrition Facts Label provides the Daily Values for total fat, saturated fat, cholesterol, sodium, total carbohydrate, and fiber, based on a 2,000 or 2,500 calorie diet. The Daily Value for these nutrients, other than cholesterol and sodium, would be higher or lower depending on an individual's calorie needs (e.g., the lower one's calorie needs, the lower the Daily Value for the nutrient).

	Nutrition Facts			
	Serving Size 1 Bar (40g)			
	Amount Per Serving			
Check Calories	Calories 170		Calories from Fat 60	
			% Daily Value*	
Limit These Nutrients	Total Fat 7g		11%	
	Saturated Fat 3g		15%	
	Trans Fat 0g			
	Cholesterol 0mg		0%	
	Sodium 160mg		7%	
	Total Carbohydrate 24g		8%	
Get Enough of These Nutrients	Dietary Fiber 3g		12%	
	Sugars 10g			
	Protein 5g			
	Vitamin A 2%		+	Vitamin C 2%
Footnote	Calcium 20%			Iron 8%
	*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:			
		Calories:	2,000	2,500
	Total Fat	Less than	65g	80g
	Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg	
Sodium	Less than	2,400mg	2,400mg	
Total Carbohydrate		300g	375g	
Dietary Fiber		25g	30g	
Calories per gram: Fat 9 • Carbohydrate 4 • Protein 4				

g. **Five Food Groups.**

The USDA Food patterns identify daily amounts of foods, in nutrient-dense forms, to eat from five major food groups and their subgroups. The five major food groups are protein, vegetables, grains, dairy, and fruit.

(1) Vitamins And Minerals. All five food groups are good sources of vitamins and minerals. Vitamins and minerals are considered essential nutrients because they perform hundreds of roles in the body. They help strengthen bones, heal wounds, and develop your immune system response and function. They also convert food into energy, and repair cellular damage. Nutrient-dense foods provide vitamins, and other substances that may have positive health effects, with relatively few calories. They are lean or low in solid fats, and minimize or exclude added solid fats, added sugars, and added refined starches, as these add calories but few essential nutrients or dietary fiber. Nutrient-dense foods also minimize or exclude added salt or other compounds high in sodium. Ideally, they are in forms that retain naturally occurring components such as dietary fiber. All vegetables, fruits, whole grains, fat-free or low-fat milk and milk products, seafood, lean meats and poultry, eggs, beans and peas (legumes), and nuts and seeds that are prepared without added solid fats, sugars, starches, and sodium are good sources of vitamins and minerals.

(2) Vegetables.

(a) Dark-Green Vegetables. All fresh, frozen, and canned dark-green leafy vegetables and broccoli, cooked or raw. For example, broccoli, spinach, romaine, collard, turnip, and mustard greens.

(b) Red And Orange Vegetables. All fresh, frozen, and canned red and orange vegetables, cooked or raw. For example, tomatoes, red peppers, carrots, sweet potatoes, winter squash, and pumpkin.

(c) Beans And Peas. All cooked and canned beans and peas. For example, kidney beans, lentils, chickpeas, and pinto beans. Does not include green beans or green peas (see additional comment under protein foods group).

(d) Starchy Vegetables. All fresh, frozen, and canned starchy vegetables. For example, white potatoes, corn, and green peas.

(e) Other Vegetables. All fresh, frozen, and canned other vegetables, cooked or raw. For example, iceberg lettuce, green beans, and onions.

(3) Fruits. All fresh, frozen, canned, dried fruits, and fruit juices. For example, oranges and orange juice, apples and apple juice, bananas, grapes, melons, berries, and raisins.

(a) Most fruits are major contributors of several nutrients that are under-consumed in the United States, including folate, magnesium, potassium, dietary fiber, and vitamins A, C, and K. Several of these are of public health concern for the general public (e.g., dietary fiber and potassium) or for a specific group (e.g., folic acid for women who are capable of becoming pregnant).

(b) Consumption of fruits is associated with reduced risk of many chronic diseases. Specifically, moderate evidence indicates that intake of at least 2/2 cups of fruits per day are associated with a reduced risk of cardiovascular disease, including heart attack and stroke. Some fruits may be protective against certain types of cancer.

(c) Most fruits, when prepared without added fats or sugars are relatively low in calories. Eating them instead of higher calorie foods can help adults and children achieve and maintain a healthy weight.

(4) Grains. In the U.S. marketplace, consumers have a wide variety of grain-based food options. Although Americans generally eat enough total grains, most of the grains consumed are refined grains rather than whole grains. Some refined grain foods also are high in solid fats and added sugars.

(a) Whole Grains. Whole grains are a source of nutrients such as iron, magnesium, selenium, B vitamins, and dietary fiber. At least half of recommended total grain intake should be whole grains. Less than 5 percent of Americans consume the minimum recommended amount of whole grains, which for many is about 3 ounce-equivalents per day. On average, Americans eat less than 1 ounce-equivalent of whole grains per day. Some examples of whole-grain ingredients include buckwheat, bulgur, millet, oatmeal, quinoa, rolled oats, brown or wild rice, whole-grain barley, whole rye, and whole wheat.

(b) Refined Grains. Have been milled to remove the bran and germ from the grain. This is done to give grains a

finer texture and improve their shelf life, but it also removes dietary fiber, iron, and many B vitamins. Americans should aim to replace many refined-grain foods with whole-grain foods that are in their nutrient-dense forms to keep total calorie intake within limits. When refined grains are eaten, they should be enriched.

(c) Enriched Grains. Grain products with B vitamins (thiamin, riboflavin, niacin, folic acid) and iron added. Most refined-grain products are enriched.

(5) Dairy Products. All milks, including lactose-free and lactose-reduced products and fortified soy beverages; yogurts, frozen yogurts, dairy desserts, and cheeses. Dairy products contribute many nutrients, such as calcium, vitamin D (for products fortified with vitamin D), and potassium, to the diet. Moderate evidence shows that intake of milk and milk products are linked to improved bone health, especially in children and adolescents. Moderate evidence also indicates that intake of milk and milk products are associated with a reduced risk of cardiovascular disease and Type-2 diabetes, and with lower blood pressure in adults.

(6) Protein Foods. All meat, poultry, seafood, eggs, nuts, seeds, and processed soy products. Meat and poultry should be lean or low-fat. In addition to protein, these foods contribute B vitamins (e.g., niacin, thiamin, riboflavin, and B6), vitamin E, iron, zinc, and magnesium to the diet. However, protein also is found in some foods that are classified in other food groups (e.g., milk and milk products). The fats in meat, poultry, and eggs are considered solid fats, while the fats in seafood, nuts, and seeds are considered oils. Meat and poultry should be consumed in lean forms to decrease intake of solid fats. Consumption of a balanced variety of protein foods can contribute to improved nutrient intake and health benefits.

(7) Hydration. Without proper water intake, even the most nutrient rich diet will not lead to peak performance. Hydration is an extremely important aspect of overall fitness. Hydration helps your body process the food and nutrients you intake and improves function of major organs and muscles.

(a) Dehydration. A lack of water leads to dehydration. There are different stages of dehydration.

1. Mild Dehydration. Dehydration can have several symptoms in its mild form, to include increased thirst,

dry mouth, tiredness, urine output is low volume and more yellowish than normal, headache, and dizziness.

2. Severe Dehydration. Can be devastating.
Its symptoms include:

a. Severely decreased urine output or no urine output. The urine, if any, produced is concentrated and a deep yellow or amber color.

b. Dizziness or lightheadedness that does not allow the person to stand or walk normally.

c. Blood pressure drops when the person tries to stand after lying down (low blood pressure or orthostatic hypotension)

d. Rapid heart rate.

e. Fever.

f. Poor skin elasticity (skin slowly sinks back to its normal position when pinched).

g. Lethargy, confusion, seizure, or coma.

2. RESOURCES TO FUEL FOR PERFORMANCE. (MCCS-COND-1001b)

A basic knowledge of what the five food groups are, and what nutrients do is a good building block to understanding nutrition in general. However, just understating what the groups are is not enough. Marines also need to be aware of how they should incorporate those food groups into their diets. Carbohydrates, fats, and proteins all play important parts of fueling the body for action.

a. Energy Balance. Is one of the most important aspects nutrition. As discussed in the previous topic, it is the difference between calories consumed through eating and drinking and those expended through physical activity and metabolic processes. Without paying appropriate attention to energy balance, Marines can find themselves eating too much, and gaining weight, or not eating enough to support needed activities.

b. **Serving Sizes.**

(1) Vegetables. 4-5 servings of vegetables should be consumed every day. This can be accomplished by eating raw leafy vegetables, cut-up raw or cooked vegetables, or drinking vegetable juice.

(2) Fruits. 4-5 servings of fruits should be consumed every day. This can be accomplished by eating a piece of medium fruit, dried fruit, fresh, frozen or canned fruit, or drinking fruit juice.

(3) Grains. 6-8 servings of grains should be consumed every day. This can be accomplished by eating bread, cereal, rice or pasta.

(4) Dairy. 2-3 servings of milk and milk products should be consumed every day. This can be accomplished by eating yogurt or cheese or drinking milk.

(5) Protein. 6 or fewer servings of lean meats, poultry and fish should be consumed daily. This can be accomplished by eating cooked meats, poultry or fish, and eating eggs. Eating a high protein diet and cutting out the rest of the food groups would be considered an unhealthy eating pattern (behavior).

(6) Water. At a minimum, try to drink at least half your body weight in fluid ounces per day. For example, $150 \text{ lbs} \times 0.5 = 75 \text{ fluid oz.}$ In addition to this, water intake will need to be increased during and after exercise, or other strenuous activities, in the field, or in hotter climates. Don't just wait until you are thirsty to start hydrating.

(7) Macronutrients. The macronutrients that we get from the five main food groups are also an important part of nutrition, and each should be consumed accordingly.

(a) Carbohydrates. These are the vital fuel for endurance and resistance activities, competitive athletic events, mental agility, and healthy living. Typically, 50 to 70 percent of daily energy intake should come from carbohydrates. Most calories from carbohydrates should come from complex carbohydrates. 1 gram of carbohydrates is equal to 4 kcal.

1. Complex Carbohydrates. This includes grains, fruits, seeds, potatoes, pasta, seaweed, algae, peas and

beans, and all other vegetables. These helps refuel the body quickly and make up part of a good post workout meal.

2. Simple Carbohydrates. Including table sugar, honey, fruit sugars, milk sugar, brown sugar, corn syrup, maple syrup, corn sweeteners, high-fructose corn syrup, and molasses should be eaten sparingly.

3. How Your Body Uses Carbohydrates.

a. Fuel for muscles, brain, heart, and other organs in the form of glucose; the brain requires 130 grams/day from glucose.

b. Building blocks to make chemicals needed by the body.

c. Chemical cement for joints and other structures in your body.

d. Glycogen is the only carbohydrate stored in humans.

e. Glycogen is stored in liver and skeletal muscles, is limited to about 500 grams and is depleted by three to four hours of heavy exercise.

(b) Fats. The primary form of stored energy. They are essential but should be eaten in moderation. It is recommended that no more than 35% of total calories come from fat. 1 gram of fat is equal to 9 kcal. Fats perform critical roles in the body like storing energy, insulating the body, transporting nutrients to places throughout the body, protecting organs, and it has a structural role in cells. There are several different kinds of fats.

1. Saturated Fats. These are solid at room temperature, and come from foods like ice cream, whole milk, whole milk cheeses, butter, lard, meat, palm kernel, coconut oils, and cocoa butter.

2. Polyunsaturated Fats. These are liquid at room temperature they include things like safflower, sesame, soy, corn and sunflower-seed oils. Also, the fats from some nuts, seeds, and fish.

3. Monounsaturated Fats. These are liquid at room temperature but may solidify in the refrigerator. They include Olive oil, canola and peanut oil, and the fats found in peanut butter, cashews, almonds, and avocados.

4. Trans Fats. Also known as Partially Hydrogenated fats are man-made from saturated fats. These come in Cookies, crackers, commercial baked goods, French fries, donuts, fried onion rings, and other fried foods. These fats should be avoided.

(c) Proteins. These are essential for building and repairing body tissues. Protein needs are determined by age, body weight, and activity level. Many athletes believe that if they eat more protein, their muscles will increase in size, but this is not true. Excess calories from protein can be converted to and stored as fat. Additionally, large quantities of protein strain the liver and the kidneys. Proteins contain amino acids that the body needs. 1 gram of protein is equal to 4 kcal. Some functions of protein in the body include

1. Muscle contraction.
2. Formation of muscles, hair, skin, and tissues.
3. Repair of injuries.
4. Transportation of fats, vitamins, and minerals throughout the body.

3. FATIGUE MITIGATION. (MCCS-COND-1001c)

a. SLEEP DEPRIVATION.

(1) Sleep Debt. People accumulate a "sleep debt" (cumulative loss of sleep over time) when they perform under limited sleep conditions. The only corrective measure for satisfying this sleep debt is sleeping itself. The average person requires 6 to 8 hours of sleep each day. Sleep debt, or continuous sleep deprivation negatively effects mission accomplishment, memory, reasoning, mental assessments, decision-making, problem-solving, subsequent actions, and overall effectiveness.

(2) Military Operations And Sleep. By their demanding nature, Military operations will create situations where

obtaining needed sleep will be difficult or impossible. Accordingly, service members may have opportunities for only limited or fragmented sleep over an extended period. As a result of these periods of sleep loss, several combat tasks are likely to show decreased performance and they are:

- (a) Orientation with friendly and enemy forces.
- (b) Maintaining camouflage, cover, and concealment.
- (c) Command and control activity (directing location repositioning, directing mounted defense, assigning fire zones and targets).
- (d) Non-stop, unrelieved combat operations (sustained operations) with little or no sleep degrade performance and erode mental abilities more rapidly than physical strength and endurance.

(3) The Mental Parameters Affected.

- (a) Decision making.
- (b) Reasoning.
- (c) Memory tasks.

(4) Combat And Sleep. For continuous combat operations, when possible, planning should be done ahead of time to provide members 5 to 6 hours sleep every 24 hours. However, missions or enemy actions sometimes require exceptional exertion for several days with only unpredictable and fragmented (sleep-as required) rest periods in sustained operations.

(a) Sustained Combat. Long periods of combat will lead to exhaustion and reduction in effective basic tasks performance.

(b) The First Night Of Combat. Normal sleeping habits and routines are abnormal. The Marine will feel the effects of fatigue and the pressure of stress from noise, disrupted sleep time, and threat to life. While essential for endurance, sheer determination cannot offset the mounting effects of adverse conditions.

(c) Cognitive Degradation. Poor decision making begins during and after the first 24 hours of sleep deprivation.

(5) Leadership. Leaders can expect declining moods, motivation, initiative, planning ability, preventive maintenance and increase risk, due to impaired performance.

(a) Leaders must recognize erratic or unreliable task performance in subordinates, as well as themselves.

(b) Alertness and performance decline gradually with partial sleep deprivation; that is, when sleep is limited to 4 to 5 hours per night. After 5 to 7 days of partial sleep deprivation, alertness and performance decline to the same low levels as those following 2 days of total sleep deprivation.

(c) After 48 to 72 hours without sleep, military personnel become combat ineffective.

(6) Food Intake. If Marines are too busy, stressed, or tired, to eat adequate rations during continuous operations, their caloric intake will be reduced. This may also lead to both physical and mental fatigue and degraded performance.

(a) Proper nutrition must be maintained for optimal performance, even though Marines will get tired.

(b) While caffeine can sometimes temporarily improve performance, there is no substitute for actual sleep.

(7) Sleep Loss Indicators. Fatigue may still linger for up to 3 days after a 12-hour rest period that follows extended periods of sleep loss. Both mental and physical changes occur, with symptoms varying among individuals. Leaders must observe service members for the following indications of sleep loss and degraded performance.

(a) Physical changes in appearance, including vacant stares, bloodshot eyes, pale skin, and poor personal hygiene.

(b) Mood changes, decreased willingness to work, and diminished performance go hand-in-hand. Service members may experience decreasing levels of energy and alertness

(c) Service members may feel more effort is needed to perform a physical task in the morning than in the afternoon. Exaggerated feelings of physical exertion may lead to work stoppage also the tendency to fall asleep is considerably more noticeable than other times.

(d) Both bickering, and irritability increase with sleep loss.

(e) Comprehension and perception slow considerably. Individuals require extended time to understand oral, written, or coded information; to find a location on a map and/or chart coordinates.

b. **Mitigating Fatigue.**

Sleep deprivation produces stress and, therefore, sleep management is important. Sleep management is a combat multiplier. Planned sleep routines are important for keeping the unit, the individual Service members, and the leader himself functioning as required while reducing sleepiness during continuous combat. Since leaders are responsible for planning sleep routines, they need a basic understanding of the physiological and behavioral aspects of sleep and their impact on performance.

(1) Sleep Shifts. The best tool utilized to enforce sleep patterns is sleep shifts. Sleep shifts are staggered work schedules that can be set up for two shifts working 4 hours on/4 hours off, 6 hours on/6 hours off, and 12 hours on/12 hours off. Each shift follows the same schedule daily. It is better to maintain regular shift schedules than schedules that continually change.

(2) Measuring Sleep Loss. Sleep loss can be measured by:

(a) Keeping a sleep log and/or activity log. From pre-deployment to post-deployment, log sleep and nap periods. Service members need 4 to 5 hours per 24-hour period; 6 or 7 hours is optimum. If they receive less, the first chance for a long rest period must be used for sleep. In order to maintain sleep hygiene, Marines should utilize a sleep log to record their sleep patterns.

(b) Observing performance and asking questions. Look for the indications of sleep loss—such as increase in error occurrence, irritability, difficulty understanding information, and attention lapses—with concurrent decreases in initiative, short-term memory, and attention to personal hygiene. Confirm sleep loss by asking the obvious question: "When did you sleep last and how long did you sleep?"

(c) If a single, unbroken period of 4 to 5 hours is

not available for sleep, "power naps" of 15 to 30 minutes, although less recuperative, can be taken. Marine must capitalize on every opportunity for a "power nap." Merely resting by stretching out does not take the place of sleep. Only sleep can satisfy the need for sleep.

4. **MISSION READY LIFESTYLE.** (5 Min)

No matter what the mission is, or what environment you are operating in, you, as a Marine must be proactive, and lead a mission ready lifestyle in order to be fit, ready, and resilient enough for whatever you may face. Your leadership will be there to guide you, but it is on each individual Marine to use sources for optimal nutrition, to fuel their body for performance, and to mitigate fatigue by ensuring they get enough sleep when possible to be ready to take the fight to any part of the World. There are several references that can help you on your way to leading a Mission Ready Lifestyle.

a. **Resources.**

- (1) Chain of Command
- (2) Human Performance Resource Center Website - www.hprc.online.org
- (3) USDA Choose MyPlate - usda.gov
- (4) Combat and Operational Stress Control - MCTP 3-30E

5. **DYNAMIC WARMUPS.** (MCCS-COND-1002a)

Properly warming up prior to exercise is one of the best ways to ensure that Marines are able to perform at their peak and help prevent injuries. Such warmups speed up the circulation to prepare the body to take an overload, and help to prevent injury to muscles and joints after exercising. The most effective way to warmup prior to exercise is known as the Dynamic Warmup. A Dynamic Warm-Up can increase the core and muscle tissue temperature through a series of progressive exercises that simulate the activity about to be performed.

a. **Purpose Of The Dynamic Warmup.**

- (1) A dynamic warm-up not only prepares the body for the demands of the upcoming workout, but also has the potential to reduce the risk of injury in both the short and long term.

(2) Other benefits of a dynamic warmup are:

(a) Increase performance.

(b) Increase circulation to muscle groups.

b. **Rationale**. By performing a proper dynamic warm-up, one improves the efficiency of oxygen uptake and carbon dioxide removal, removal and breakdown of anaerobic byproducts (lactic acid), and increases coordination, skill accuracy, and reaction time.

c. **Program Development**. These four principles are essential for proper dynamic warm-up development; adequate time allocation, appropriate exercise selection, exercise repetitions, and proper progression. The ability to determine the appropriate exercises is crucial to developing a proper exercise preparation. These fundamental principles should guide your exercise selection; fundamental movements found in the activity, considering the tempo and speed of the activity. Incorporate deceleration (change of direction). Ideal time to develop, refine movement skills, teach and solidify proper mechanics needed for activity success.

(1) An example of a full body dynamic warmup follows. The exercises below would be sufficient to warm up the entire body prior to an exercise event. It is imperative to incorporate appropriate exercise selection in your dynamic warmups to prepare for the event you are about to accomplish. For instance, when preparing for a PFT, arm circles would be a good way to dynamically warmup prior to pullups. The motion activates the same joints, and muscles without applying full body weight to the system about to be used.

EXERCISES	SETS	TIME	DIST.
Arm Circles	2	30SEC	
Neck Clock	2	30SEC	
Fire Hydrants	2	30SEC	
Bear Crawl			25YD
Monster Walk			25YD
Spiderman			25YD
Inchworm			25YD
Single Leg Balance			25YD
Frankenstein			25YD
Lunge Elbow to Instep			25YD
Lunge w/ Twist			25YD
Crab Walk			25YD

(2) Common Dynamic Warmup Exercises. The Marine Corps uses many different dynamic warmups including those for upper body, lower body, and core. Just a few of those exercises include: Arm Circles, Back Peddle Reach, Bear Crawl, Burpees, Butt, Kickers, Carioca, Carioca w/ Knee Drive, Crab Walk, Cross-Over Lunge, Cross-Over Walk, Diagonal Lunges, Donkey Kicks, Eight Count Body Builders, Frankensteins, Frog Thrust, Frog Thrust w/ Jump, Leg Swings, Hip Abduction, Hip Circles, Inchworms, Jump Thrusts, Knee To Elbow Push-Ups, Lateral Cross-Over Skips, Lateral Lunges, Lateral Shuffle, Lunge w/ Power Skip, Monster Walk, Mountain Climbers, Power Skip (Distance), Power Skip (Height), Sagittal Leg Swings, Side Straddle Hops, Single Leg Balance, Spiderman, Split Jack Forward, Trunk Circles, Trunk Twists, Walking Knee Hug, Walking Leg Cradle, and Walking Lunge.

6. BENEFITS OF FORCE FITNESS. (MCCS-COND-1002d)

The goal of Marine Corps Physical Fitness is to optimize mental and physical performance and make all Marines more lethal, resilient, and more capable on the battlefield. This need is going to be met through the Commandant's initiative of creating Force Fitness and the Force Fitness Instructor.

a. Force Fitness Instructors. Serve as the commander's Subject Matter Expert on nutrition, physical fitness, and sports-related injury prevention and rehabilitation. An FFI will advise the commander on the design and implementation of a structured physical fitness training program that is uniquely tailored to the units training and exercise employment plan. An FFI will be capable of assessing and baselining the physical fitness of individual Marines and then designing a comprehensive

program to facilitate progressive improvement. An FFI will also be capable of integrating available resources to support the commander's physical fitness training objectives.

b. **Functional Areas Of Force Fitness.**

(1) Core Strength. The core is more than just your abs; it refers to all the muscles that stabilize and move the shoulder blades, trunk, pelvis, and hips. A strong core allows the arms and legs to move more efficiently and safely, and it is the center of any movement your body makes. The Main function of improving core strength is the Dynamic stabilization of the spine.

(2) Overall Strength Exercises. These exercises are performed with heavy weight, and lower repetitions. Examples of a good upper or lower body exercise set and repetition scheme would be.

(a) Upper Body - Overhead Press 5 sets of 5 repetitions.

(b) Lower Body - Barbell Back Squat 5 sets of 5 repetitions.

(3) Endurance Exercises. These exercises are performed with light weight, or with just body weight. The purpose of these exercise is to build physical stamina through increased repetitions.

(a) Upper Body - Ammo Can Lift During CFT.

(b) Lower Body - Lunges 3 sets of 15 each leg.

(4) Agility Training. Agility training consists of being able to change direction quickly and as faultlessly as possible. The ability to react instantly and to maintain orientation during rapid changes of body position is important to survival. This ability may be developed by conditioning exercises that require varied and rapid changes of body position on the ground, and in the air. Examples of agility training are sprint ladders, obstacle courses, and football drills.

(5) Mobility And Flexibility. While closely related, mobility and flexibility are not the exact same things. Mobility is the amount a joint can move before the surrounding ligaments, muscles, and tendons restrict its movement. Mobility

depends partly on the flexibility or "give" of these surrounding tissues. Components of a mobility program may include flexibility static exercises such as kneeling hip flexor, standing hamstring, butterfly stretch, or foam rolling. A good flexibility program will follow what is known as the FITT factors for stretching. These include.

(a) Frequency. Flexibility exercises (stretching) should be done at least 2-3 days per week, but daily exercise is most effective too. You might see short-term improvements in flexibility after each session of stretching, but long-term changes usually take 3-4 weeks of regular stretching exercises

(b) Intensity. Your flexibility exercises should involve major muscle groups (neck, shoulders, upper and lower body, etc.). Static stretching is great for making long-term improvements in your flexibility. Stretch only to the point of slight discomfort within your range of motion.

(c) Type. Stretches can be static, dynamic, ballistic, or Proprioceptive Neuromuscular Facilitation (PNP is performed with a partner, involves a series of contractions, relaxations, with enforced stretching during the relaxation phase).

(d) Time. Probably the most important aspect of "time" is when to stretch: Dynamic stretching should be part of your pre-activity/exercise warm-up, for at least 5-10 minutes in duration. Static stretches aren't useful as a warm-up to exercise and might hurt your performance. A reasonable target for stretches, including ballistic and PNF, involves a 3-6 second contraction followed by 10-30 seconds of assisted stretch—about 40 seconds of total stretching time for 2-4 sets.

c. **Force Fitness Programming.**

Force Fitness Programming requires the individual to conduct an Individual Performance Assessment (IPA), a Functional Mobility Assessment (FMA), and to be interviewed. The Force Fitness Program is performed following a card system. There are three color-coded levels of performance (Orange, Blue, and Black). Selection of the appropriate level to begin the program is based off a Marine's IPA and FMA results.

Each card for each level is comprised of 6 Tiers.

(1) Dynamic Warm-Up/Tier 1. The dynamic warm up is a preparatory phase Marines should do at the beginning of any exercise session. It consists of light stretching, limbering, and 'warming' of the muscles allowing blood to flow around the body. Optimal for flexibility, range of motion, easing stress on the joints and tendons which potentially could prevent injury.

(2) Task Specific Warm-Up/Tier 2. After the dynamic warm-up has been conducted, an addendum has been created which directly targets the muscles that will be used in the upcoming workout. This is key because although the entire body is warm, there is a direct stimulus applied to the target muscles/muscle group, which primes it for the activity.

(a) Consists of upper and lower body strength/endurance exercises.

(b) Will vary depending of the specified workout.

(3) Workout Stressor/Tier 3. This portion of the workout will vary from day to day. These workouts are designed for strength and endurance which will test the aerobic and anaerobic abilities. As advancement happens through the card system, a progression of Olympic lifting will be added to the program.

(4) Auxiliary/Tier 4. The auxiliary exercises are designed to stimulate the muscles utilizing the seven foundational movements, creating a more balanced approach to training. With the muscles already activated, the auxiliary exercises will change the direction of the movement to give more variety and muscle activation.

(5) Optional Finisher/Tier 5. Fitness levels vary from Marine to Marine, so in order to get the most out of every workout, the optional finisher was created. Not everyone will be able to have the energy for this, but for the select few that have a little more "gas in the tank" the optional finisher will be the key to shifting the level of fitness into another gear. The purpose of this is to literally empty the tank. Requires max effort for many rounds.

(6) Recovery/Tier 6. Cooling down after a workout is as important as warming up. After physical activity, your heart is still beating faster than normal, your body temperature is higher, and your blood vessels are dilated. This means if you

stop too fast, you could pass out and feel sick. It is good to stretch when you are cooling down because your muscles and joints are still warm. The purpose of a cool down is to reduce muscle break down. Stretching can reduce the buildup of lactic acid, which can lead to muscles cramping and stiffness.

Tier 1 Dynamic Warm-up					
Order	EXERCISE	REPS	DISTANCE	SETS	NOTES
A	Side Straddle Hops	20		1	
B	Sagittal Leg Swings	20		1	10 each side
C	Bear Crawl		25YDS	1	
D	Inchworm		25YDS	1	
E	Carioca w/ Knee Drive		25YDS	2	Down/Back Same Direction
F	Butt-Kickers		25YDS	1	
G	Mountain Climbers	10		1	
H	Thrust	10		1	
Tier 2 Task Specific Warm-up Complete 1 set of exercise A-D, repeat from A.					
Order	EXERCISE	SETS	REPS	LOAD	NOTES
A	Elbow to Instep	2	10		
B	Groiners	2	10		
C	Prone Superman	2	10		
D	Buddy Power Ups	2	10		BUDDY ON BACK
Rest 60 to 90 sec Between Rounds					
Tier 3 Endurance; Perform specified reps on the min for the set amount time					
	EXERCISE	SETS	REPS	LOAD	NOTES
	Buddy Squat	10min	3		USE SAND BAG
2-3 Reps on the min					
Tier 4 Auxillary Exercises; Complete 1 set of exercise A-F, Repeat from Exercise A					
Order	EXERCISE	SETS	REPS	LOAD	NOTES
A	Ammo Can Reverse Lunge	4	30SEC		
B	Russian Twist	4	30SEC		
C	Ammo Can Squat	4	30SEC		
D	V-ups	4	30SEC		
E	Star Jumps	4	30SEC		
F	Sandbag Lateral Bag Drag	4	30SEC		
G	Sandbag Goodmorning	4	30SEC		
Rest 1min Between Rounds					
Tier 5 Optional Finisher					
Order	EXERCISE	SETS	REPS	LOAD	NOTES
A B	50 BURPEES	1			
Tier 6 Flexibility					
Order	EXERCISE	SETS	TIME	NOTES	
A	Summo Stretch	Calf Stretch	2	45sec/30sec	1 Set Right/1 Set Left
B	Hip Flexor	Hamstring Stretch	2	45sec/30sec	1 Set Right/1 Set Left
C	Side Bend	Glute Stretch	2	45sec/30sec	1 Set Right/1 Set Left
D	Cross Body	Quad Stretch	2	45sec/30sec	1 Set Right/1 Set Left

7. COOL DOWN EXERCISES. (MCCS-COND-1002b)

Just like a Dynamic warmup helps Marines get ready for exercise, the purpose of a cooldown exercise is to allow the body, muscles, ligaments, and other tissues to gradually come back down to a resting temperature.

a. The benefits of a cool down exercise:

(1) Can lead to improved mobility, flexibility, reduction of muscle breakdown.

(2) Decrease in the buildup of lactic acid.

b. Cool down exercises may be dynamic, or static. They are not done at full speed or force. A cool down requires gradual progression in order to return the body to a resting temperature.

(1) Examples Of Cool Down Exercises.

(a) 50 Percent Jog.

(b) Walking Lunges.

(c) Cobra Stretch.

(d) Butterfly Stretch.

(e) Standing Quadriceps Stretch.

8. MAINTAINING PHYSICAL FITNESS. (MCCS-COND-1002)

As Marines, we have a duty to maintain peak physical fitness to condition our bodies for the rigors of combat. The Marine Corps Force Fitness Program, along with command leadership provide guidelines for exercise and nutrition that can be utilized by individual Marines to improve their levels of physical fitness, strength, agility, flexibility, and mobility. However, the demand is on each individual Marine to ensure they are doing everything they can to maintain their physical fitness, find deficiencies, and seek improvement.

PERFORMANCE EXAMINATION CHECKLIST

MCCS-COND-1001

Given any mission and environment throughout a Marine's career, maintain habits associated with a healthy lifestyle to optimize physical and mental performance in order to build and maintain resiliency.

Student Instructions:

1. You are a Marine and must maintain a mission ready lifestyle.
2. There is no time limit for this task.
3. To achieve mastery, you must complete the performance checklist and maintain a mission ready lifestyle to build and maintain resiliency.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Determine performance nutritional requirements.			
2. Assess personal eating behaviors.			
a. Identify healthy eating behaviors.			
b. Log personal eating behaviors.			
3. Make sound nutritional choices based on performance needs.			
a. Identify nutritional needs based on performance requirements.			
4. Assess individual sleep hygiene.			
a. Log sleep practices.			
5. Manage fatigue for optimal performance.			
a. Counteract the effects of fatigue.			

MCCS-COND-1002

Given references and a unit physical fitness and combat conditioning program, maintain physical fitness to condition for the rigors of combat operations.

Student Instructions:

1. You are a Marine and must maintain physical fitness.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and condition yourself for the rigors of combat operations.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Conduct a dynamic warm up prior to executing an event.			
a. Perform mobility exercises.			
(1) In accordance with a mobility exercises session.			
2. Execute a unit/personal conditioning program.			
a. Perform upper body strength exercises.			
(1) In accordance with an upper body strength session.			
b. Perform lower body strength exercises.			
(1) In accordance with a lower body strength session.			
c. Perform upper body endurance exercises.			
(1) In accordance with an upper body endurance session.			
d. Perform lower body endurance exercises.			
(1) In accordance with a lower body endurance session.			
e. Perform agility exercises.			
(1) In accordance with an agility exercise session.			

3. Conduct a cool down after executing an event.			
a. Perform recovery stretching exercises.			
(1) In accordance with a recovery stretching session.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
MCTP 3-30E	Combat and Operational Stress Control	Chapter 1, and Chapter 3
MCO 1500.62	Force Fitness Instructor Program (FFIP)	Entire Order
www.hprc.online.org	Human Performance Resource Center website	Entire Website
MCO 1500.59	Marine Corps Martial Arts Program	Entire Order
MCO 6100.14	Marine Corps Physical Fitness Program (MCPFP)	Entire Order
MCO 1500.52_	Marine Corps Water Survival Training Program (MCWSTP)	Entire Order
MCRP 8-10B.4	Marine Physical Readiness Training for Combat	Entire Manual

NOTES :

STUDENT OUTLINE

CONDITIONING HIKES

MCT0107

06/28/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) Given a fighting load of 55 pounds (+/- 10%), assigned weapon and mission essential equipment, conduct a forced march to move 15 kilometers in under 4 hours. (MCCS-COND-1003)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a mission to execute a 15 Kilometer forced march, conduct a dynamic warm-up in order to mitigate the risk of injury. (MCCS-COND-1003a)

(2) Given an area of operation and a completed 15 Kilometer forced march, conduct a cool down in order to mitigate the risk of injury. (MCCS-COND-1003b)

STUDENT INFORMATION

OVERVIEW: The purpose of this period of instruction is to provide you with the knowledge and skills required to help condition and prepare you for a hike. I will do this by covering fundamentals of a march, preparation of a force march and execution of a force march. It is critical that as Marines we learn how to effectively and efficiently hike when we are required. This lesson relates to all physical conditioning lessons.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **FUNDAMENTALS OF A MARCH.** (MCCS-COND-1003)

a. **March Mission.** A successful foot march is when Marines arrive at their destination at the prescribed time, and are physically and mentally able to immediately execute their mission.

(1) A foot march depends on being able to control the unit and is accomplished through the chain of command by proper supervision and organization of units.

(2) Forced marches are where the unit can accelerate its rate of movement so that it arrives at its destination quickly. Forced marches require speed, exertion, and an increase in the number of hours marched each day beyond normal standards.

(3) Commanders will determine the amount and type of equipment carried, rate of March, length and number of rests equates with Marines' physical endurance.

(4) Physical and mental conditioning is normally done through unit conditioning programs.

b. **March Classification.** Troop movements can be tactical or administrative. Both classifications apply in most movements but one is normally dominant. The formation for foot marches varies depending on the routes available and the enemy situation. The usual formation for tactical marches is a column of two files with one file on each side of the road. Based on the enemy ground threat, the column forms into a route column, tactical column, or approach march.

(1) **Administrative Movement.** Administrative movements emphasize the best method of movement and reemphasize tactical considerations. Administrative movements are based on likely ground contact with the enemy being remote, both en route and soon after arrival at the destination. They are normally conducted over secure routes if friendly forces are between the foremost elements of the moving force and the enemy. A route column is enforced when the likelihood of ground contact with the enemy is remote. Administrative considerations govern movement; therefore, units are grouped administratively for ease of movement and control. Commanders normally move at the head of their units. This formation is sometimes called an administrative column.

(2) Tactical Movement. Tactical movements are conducted in the combat zone to emphasize tactical considerations such as security and the use of combat-ready formations. They reemphasize efficiency and ease of movement, and they anticipate ground contact with the enemy en route or after arriving at the destination. Movements may be conducted over unsecure routes if there are no friendly forces between the foremost elements of the moving force and the enemy. When relocating in the combat zone, the unit conducts tactical foot and motor marches in the rears. This occurs before hostilities begin or when a forward defense has been established. Speed is vital, and security requirements are minimal.

(a) Units move by tactical foot or motor marches to an assembly area where they prepare to conduct combat operations. During tactical movements, the commander must be prepared to maneuver against an enemy force. A tactical column is enforced when ground contact is possible. Units are grouped tactically to permit prompt adoption of combat formations. Movement is usually conducted over roads or trails and by the fastest means available. March units establish local security to the flanks. Dispersion depends on the enemy situation.

(b) Once a unit is deployed in its assigned zone or sector, it normally moves using the proper techniques for the assigned mission. An approach march is enforced when ground contact with the enemy is imminent. Tactical considerations govern; therefore, elements whose contact with the enemy is likely adopt suitable combat formations. The commander's main concerns are to quickly bring superior combat power to bear against the enemy and to protect his force against surprise. The column establishes guards to the front, flanks, and rear, but larger forces should establish a covering force to ensure unimpeded movement.

2. PREPARATION OF A FORCE MARCH. (MCCS-COND-1003)

a. Pre-Combat Checks (PCC) And Pre-Combat Inspection (PCI).

(1) PCCs determine if equipment required for the march is available and serviceable. Missing or unserviceable equipment must be reported, repaired or exchanged immediately. These checks should be conducted soon after a warning order is issued.

(2) PCIs are a series of inspections scheduled early in the preparation sequence to ensure all PCCs have been performed

properly and all individual equipment are available and functioning.

(3) PCC/PCIs will inspect Marines for the following:

(a) Nutrition. Since foot marching is a high energy expenditure event, fueling before, during, and after is a critical factor in foot march performance. MREs meet the daily requirements for minerals and electrolytes. For example, consume the crackers or bread and the beef jerky items from an MRE. Do not take salt tablets - they increase water requirements and draw water from the muscles to dilute the blood. The salt in the food in an MRE is sufficient. Eat all meals in your MRE to replace salts.

(b) Hydration. Ensuring adequate, but not excessive, hydration and maintaining an appropriate electrolyte balance can further optimize performance. Begin hydrating the days prior to a march. Marines must be encouraged to drink water or electrolyte and carbohydrate fluids at every halt and during movement to maintain proper levels of hydration and nutrients. Having a full camelback will be consumed during the march and having two full canteens will be consumed during the halts along the march.

(c) Foot Care. Foot care is an important ingredient in a Marine's morale. Marines whose feet are dirty and unkempt do not function as well as Marines who have had an opportunity to bathe and put on clean, dry socks. Keep feet clean and dry, and use foot powder. Wear clean, dry, proper fitting boots and socks (preferably cushion soled) with seams and knots outside free from holes or other obvious signs of wear. During the march when conditions permit, Marines remove only one boot at a time to massage feet, apply foot powder, change socks, and medicate blisters. If possible, give feet a daily foot cleaning. In field environments, cool water seems to reduce sensation of heat and irritation. After washing, dry feet well.

(d) Individual Load & Equipment. An individual load must prevent from hindering a marching Marine's mobility and combat readiness, the commanders identifies the minimum mission-essential equipment to fight and survive in the immediate combat operation. The standard loads are defined with respect to operational need, human factors and levels of sustainment. The unit commander still retains the authority to modify the actual load requirements based on their assessment of the situation.

The squad leader inspects Marines for proper equipment, adjustment of equipment, and full camelbacks and canteens.

1. Fighting Load. The fighting load consists of items of clothing, equipment, weapons, and ammunition that are carried by, and essential to, the effectiveness of the combat Marine and the accomplishment of the immediate mission. The commander must ensure that all fighting loads be stripped to the bare minimum.

2. Assault Load. The load that is needed during the actual conduct of the assault. It includes minimal equipment beyond water and ammunition. From the human factors perspective, the maximum assault load weight will be such that an average infantry Marine will be able to conduct combat operations with minimal degradation in combat effectiveness.

3. Approach March Load. The load necessary for the prosecution of combat operations for extended periods with access to daily re-supply. The approach march load is intended to provide the individual Marine with the necessities of existence for an extended period of combat.

4. Sustainment Load. The load taken from the point of origin into the assembly area. The sustainment load will be intended to support the individual from their pack when immediate re-supply is impossible. The sustainment load will be such that the average infantry Marine will be able to conduct limited movement within the confines of Naval shipping embark and debark aircraft or amphibious craft, and limited marching from the landing zone into a secured area.

3. EXECUTION OF A FORCE MARCH. (MCCS-COND-1003b)

a. Maintain Unit Integrity.

(1) Formation & Dispersion. Battalions normally are organized into company-size march units to facilitate control and maintain unit integrity. Normal march formation is a column of twos. Normal distance is two to five meters between Marines (one to three meters at night), 50 meters between platoons (25 meters at night).

(2) Normal Time And Frequency. Under normal conditions, a 15 minute halt is made after the first 45 minutes of marching. Following the first halt, a 10 minute halt is made after every 50 minutes of marching. Variations of this schedule are made

when a scheduled halt time occurs when passing through a built up area or when cover and concealment are required by the tactical situation and none is available. Observation posts may be established if required for the security of the unit during halts.

(3) Actions At Halts. All units in the column should be halted at the same time. At the halt signal, Marines should move to the side of the road, staying in immediate vicinity of their unit. Marines should remove or loosen gear and sit or lie with their feet elevated. Commanders inspect Marines and equipment and corpsmen administer medical treatment as required.

(4) Road Guards. Road guards are condition-oriented.

(a) If conditions require them, they are placed about 50 meters to the front and rear of columns to slow or stop oncoming or passing traffic. Distance may be increased due to variation of conditions or speed limit of the route in urban areas.

(b) If they are used, road guards are a safety precaution. The column commander places guards at road intersections or other critical points to stop traffic while the column crosses. At these times, road guards act as guides. When possible during night marches, road guards use night vision devices, flashlights, strobes, chemical lights and similar devices to control or slow down traffic.

(c) Road guards must remain vigilant at all times. They must carry enough combat power to stop an oncoming vehicle which might have intent to harm or kill.

(5) Straggler Control. Stragglers who cannot meet or maintain pace set for the foot march are the responsibility of their immediate chains of command. Leaders and ultimately the platoon sergeant must ensure Marines are linked up with rear of the march column not passing the rear road guards. Information concerning the number of Marines who fall out, their standard name lines, and medical disposition must be relayed through the chain of command to maintain accountability of personnel and equipment at all times. Marines who fall out and are carrying mission essential equipment must transfer equipment to other Marines in the unit continuing the march.

PERFORMANCE EXAMINATION CHECKLIST

MCCS-COND-1003

Given a fighting load of 55 pounds (+/- 10%), assigned weapon and mission essential equipment, conduct a forced march to move 15 kilometers in under 4 hours.

Student Instructions:

1. You are a Marine and must conduct a forced march.
2. There is a time limit of under 4 hours.
3. To achieve mastery, you must complete the performance checklist march under an assault load to complete a 15 kilometer march in under 4 hours.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Conduct Pre-Combat Checks (PCCs).			
2. Participate in Pre-Combat Inspections (PCIs).			
a. Account for individual combat equipment.			
3. Execute the march.			
a. Perform dynamic warm up. (MCCS-COND-1003a)			
b. Sustain interval for daytime/nighttime march.			
4. Conduct follow-on actions.			
a. Perform a cool down. (MCCS-COND-1003b)			

REFERENCES:

NUMBER	TITLE	PAGE
NAVMC 3500.44_	Infantry T&R Manual	Appendix E
MCRP 8-10B.4	Marine Physical Readiness Training for Combat	Chapter 3

NOTES:

STUDENT OUTLINE

TACTICAL COMMUNICATIONS

MCT0201

6/27/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) Given a situation when voice commands are difficult, impossible, or when silence must be maintained, while wearing a fighting load, utilize hand and arm signals to transmit commands or information. (0300-COMM-1001)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a situation when voice commands are difficult, impossible, or when silence must be maintained, identify a transmitted hand and arm signal to determine individual action or if there is a need to transmit information to other individuals. (0300-COMM-1001a)

(2) Given another Marine and a transmitted hand and arm signal, confirm the signal has been received by observing the receiving Marines action. (0300-COMM-1001b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to provide you with the knowledge and skills to communicate using hand and arm signals in a tactical environment, and to be able to react to them appropriately without compromising the mission. During this class we will discuss why we use signals, different signals used, and the different hand and arm signals used in a tactical environment. This lesson directly relates to Patrolling, Offense, and Defense training you will receive here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. PURPOSE OF HAND AND ARM SIGNALS.

Hand and arm signals are used to transmit commands or information when voice communications are difficult, impossible, or when silence must be maintained. Subordinate leaders repeat signals to their units whenever necessary to ensure prompt and correct execution. Hand and arm signals are the most commonly used signals. They are easy to execute and require minimal movement. They are also standardized throughout the military service, and are appropriate to all tactical environments.

2. INDIVIDUAL HAND AND ARM SIGNALS. (0300-COMM-1001a)

a. Decrease Speed. Extend the arm horizontally to the side, palm to the front, and wave arm downward several times, keeping the arm straight. Arm does not move above the horizontal.

(1) Utilized when there is a need for a unit to slow their pace.

(2) After you receive and pass on the signal, slow your pace down.

b. Change Direction Or Column (Right Or Left). Raise the hand that is on the side toward the new direction across the body, palm to the front; and then swing the arm in a horizontal arc, extending arm and hand to point in the new direction.

(1) Used when you want your unit to change the direction that they are going.

(2) After you receive and pass on the signal, change direction automatically.

c. Enemy In Sight. Hold the rifle horizontally, with the stock in the shoulder and muzzle pointing in the direction of the enemy. Aim in on the enemy target and be ready to engage him if he detects your presence.

(1) Used when the enemy is in visual sight.

(2) After you receive and pass on the signal, come to the ready and prepare to engage; await orders from your patrol leader.

d. **Range**. Extend the arm fully toward the leader or men for whom the signal is intended with fist closed. Open the fist exposing one finger for each 100 meters of range.

(1) Used for passing on the range to a target.

(2) After you receive and pass on the signal, await follow on orders.

e. **Commence Firing**. Extend the arm in front of the body, hip high, palm down, and move it through a wide horizontal arc several times.

(1) Used to tell the Marines to shoot at their target(s).

(2) After you receive and pass on the signal, immediately fire your weapon.

f. **Fire Faster**. Execute rapidly the signal Commence Firing. For machine guns, a change to the next rate of fire is prescribed.

(1) Used to increase your rate of fire.

(2) After you receive and pass the signal on, immediately fire faster at the designated rate.

g. **Fire Slower**. Execute slowly the signal Commence Firing. For machine guns, a change to the next lower rate of fire is required.

(1) Used to decrease your rate of fire.

(2) After you receive and pass the signal on, immediately fire slower at the designated rate.

h. **Cease Fire**. Raise the hand in front of the forehead, palm to the front, and swing the hand and forearm up and down several times in front of the face.

(1) Used to signal the Marines to stop firing at their targets.

(2) After you receive and pass on the signal, stop firing your weapon and await further orders, still aiming in down range at your targets.

i. **Assemble**. Raise the hand vertically to the full extent of the arm, fingers extended and joined, palm to the front, and wave in large horizontal circles with the arm and hand.

(1) Used to bring all Marines to one location to pass on orders.

(2) After you receive and pass on the signal, immediately gather on the senior Marine who passed the signal.

j. **Form Column**. Raise either arm to the vertical position. Drop the arm to the rear, describing complete circles in a vertical plane parallel to the body. The signal may be used to indicate either a troop or vehicular column.

(1) Used for rapid movement from point "A" to "B".

(2) After you receive and pass on the signal, move into a column in the direction of movement.

k. **Are You Ready?/I Am Ready**. Extend the arm toward the leader for whom the signal is intended, hand raised, fingers extended and joined, then raise the arm slightly above horizontal, palm facing outward.

(1) Used to verify that you are ready to or ask another Marine if they are ready to carry out the orders received.

(2) After you receive and pass on the signal, stand by to execute your orders.

l. **Attention**. Extend the arm sideways, slightly above horizontal, palm to the front; wave toward and over the head several times.

(1) Used to get your attention.

(2) After you receive and pass on the signal, pay attention for follow on signals.

m. **Shift**. Point to individuals or units concerned; beat on chest simultaneously with both fists; then point to location you desire them to move to.

(1) Used to shift left or right until the patrol leader signals to stop. You are still moving in the original direction of movement.

(2) After you receive and pass on the signal, shift in the designated direction.

n. **Echelon Right (Left)**. The leader may give this signal either facing towards or away from the unit. Extend one arm 45 degrees below the horizontal, palms to the front. The lower arm indicates the direction of echelon.

(1) Used to direct your firepower in a certain direction, left or right.

(2) After you receive and pass on the signal, move into that designated formation and direction.

o. **Skirmishers (Fire Team), Line Formation (Squad)**. Raise both arms lateral until horizontal, arms and hands extended, palms down. If it is necessary to indicate a direction, move in the desired direction at the same time. When signaling for fire team skirmishers, indicate skirmishers right or left by moving the appropriate hand up and down. The appropriate signal does not depend on the direction the signaler is facing. Moving the left hand up and down will always indicate skirmishers left; the right hand, skirmishers right.

(1) Used to direct your firepower to the front, for certain terrain, a finger, draw, or hill.

(2) After you receive and pass on the signal, move into that designated formation and direction.

p. **Wedge**. Extend both arms downward and to the side at an angle of 45 degrees below the horizontal, palms to the front.

(1) Used for all around security (every direction).

(2) After you receive and pass on the signal, move into the designated formation.

q. **Vee**. Extend arms at an angle of 45 degrees above the head horizontally forming the letter V with arms and torso.

(1) Used to direct your firepower to the front and flanks of the formation.

(2) After you receive and pass on the signal, move into the designated formation.

3. **HAND AND ARM SIGNALS USED WITH COMBAT FORMATION.** (0300-COMM-1001a)

a. **Fire Team.** The right arm should be placed diagonally across the chest.

(1) Used to designate that a fire team is going to receive a follow on signal.

(2) After you receive and pass on the signal, stand by for the follow on signal by the team leader or patrol leader.

b. **Squad.** Extend the hand and arm toward the squad leader, palm of the hand down; distinctly move the hand up and down several times from the wrist, holding the arm steady.

(1) Used to designate that a squad is going to receive a follow on signal.

(2) After you receive and pass on the signal, stand by for the follow on signal by the patrol leader or squad leader.

c. **Platoon.** Extend both arms forward, palms of the hands down, toward the leader(s) or unit(s) for whom the signal is intended for and move in large backward circles with hands.

(1) Used to designate that the platoon is going to receive a follow on signal.

(2) After you receive and pass on the signal, stand by for the follow on signal by the platoon commander or platoon sergeant.

d. **Close Up.** Start signal with both arms extended to the side, palms forward, and bring palms together in front of the body momentarily. When repetition of this signal is necessary, the arms are returned to the starting position by movement along the front of the body.

(1) Used to tighten up the formation.

(2) After you receive and pass on the signal, immediately tighten up your dispersion.

e. **Open Up, Extend.** Start signal with arms extended in front of the body, palms together, and bring arms to the horizontal position at the sides, palms forward. When

repetition of this signal is necessary, the arms are returned along the front of the body to the starting position and the signal is repeated until understood.

(1) Used to open up the formation.

(2) After you receive and pass on the signal, you immediately open up your dispersion.

f. **Disperse**. Extend either arm vertically overhead: wave the hand and arm to the front, left, right, and rear, the palm toward the direction of each movement.

(1) Used to scatter and/or go in the direction given; for example, if you come under attack by mortars or artillery.

(2) After you receive and pass on the signal, immediately go in the direction signaled, take cover and await follow on orders.

g. **Leaders Join Me**. Extend arm toward the leaders and beckon leaders with finger as shown.

(1) Used to get the leaders in the patrol to assemble on the senior Marine who gave the signal.

(2) After you receive and pass on the signal, all leaders will go to the designated point.

h. **I Do Not Understand**. Face toward source of signal; raise both arms to the side to the horizontal at hip level, bend both arms at elbows, palms up, and shrug shoulders in the manner of the universal "I Don't Know".

(1) Used to signal that you do not understand what they are trying to pass on.

(2) After you receive and pass on the signal, await further signals or instructions.

i. **Forward, Advance, To The Right (Left), To The Rear (Used When Starting From The Halt)**. Face and move in the desired direction of march; at the same time extend the arm horizontally to the rear; then swing if overhead and forward in the direction of movement until it is horizontal, palm down.

(1) Used to move out from your halted position in the desired direction.

(2) After you receive and pass on the signal, immediately move out in the given direction.

j. **Halt**. Carry the hand to the shoulder, palm to the front; then thrust the hand upward vertically to the full extent of the arm and hold it in that position until the signal is understood.

(1) Used to stop the formation.

(2) After you receive and pass on the signal, stop and take a knee and face outboard providing security.

k. **Freeze**. Make the signal for Halt and make a fist with the hand.

(1) Used to stop in place, DO NOT MOVE AT ALL.

(2) After you receive and pass on the signal, immediately freeze in place and await follow on signals.

l. **Dismount, Down, Take Cover**. Extend arm to the side at an angle of 45 degrees above horizontal, palm down, and lower it to side. Both arms may be used in giving this signal. Repeat until understood.

(1) Dismount, is used for getting out of a vehicle.

(a) After you receive and pass on the signal, get out of the vehicle and get in the prone position in your designated area of security.

(2) Down, is used for getting down in the kneeling or prone position.

(a) After you receive and pass on the signal, get down in the kneeling or prone position and provide security in your sector of fire.

(3) Take cover, is used for getting down and taking cover.

(a) After you receive and pass on the signal, will get down in the kneeling or prone position and utilize the nearest cover possible, utilizing micro terrain, and provide security in your sector of fire.

m. **Mount/Up.** With the hand extended downward at the side with the palm out, raise arm to the side and upward to an angle of 45 degrees above the horizontal. Repeat until understood.

(1) Used to get up from your position and to get back into the vehicles.

(2) Also used to signal, stand back up.

(3) After you receive and pass on the signal, immediately get up and mount the vehicle(s).

n. **Disregard Previous Command.** Face the unit or individual being signaled, then raise both arms and cross them over the head, palms to the front.

(1) Used to wave off the last signal or command received.

(2) After you receive and pass on the signal, await follow on signals or commands.

o. **Right (Left) Flank (Vehicles, Craft, or Individuals Turn Simultaneously).** Extend both arms in direction of desired movement.

(1) Used to turn you unit all at the same time in the same direction.

(2) After you receive and pass on the signal, immediately turn in that direction as a whole unit.

p. **Increase Speed/Double Time.** Carry the hand to the shoulder, fist closed; rapidly thrust the fist upward vertically to the full extent of the arm and back to the shoulder several times. This signal is also used to increase speed.

(1) Increase speed is used to speed up your rate of movement.

(2) Double time is used to start running at a double time pace.

(3) After you receive and pass on the signal, speed up your rate of movement as signaled.

q. **Hasty Ambush Right (Left)**. Raise fist to shoulder level and thrust it several times in the desired direction.

(1) Used for signaling the ambush to be oriented in that direction.

(2) After you receive and pass on the signal, immediately get down in the prone position behind the nearest cover and cover your sector of fire until the ambush is initiated.

r. **Rally Point/En-Route Rally Point**. Rally points are predetermined spots on a map and en-route rally points are determined while on the move. Touch the belt buckle with one hand and then point to the ground.

(1) Used to designate a point where Marines can link up if separated or meeting another patrol/unit.

(2) Rally points are determined before stepping off on patrol. En-route rally points are determined during patrol.

(3) After you receive and pass on the signal, continue to move in your original direction.

s. **Objective Rally Point**. Touch the belt buckle with one hand, point to the ground, and make a circular motion with the hand.

(1) Used as the last covered and concealed position you are located at before and after you attack your objective.

(2) After you receive and pass on the signal, ensure signal is passed at the designated point, and you await further instructions.

t. **Pace Count**. Reach down with either hand and tap the heel of the boot as you bend your knee.

(1) Used when the patrol leader needs to know how far they have traveled from their last point.

(2) After you receive and pass on the signal, the Marines designated as the pace counters pass up the count to the patrol leader by hand and arm signal or tell him personally.

u. **Head Count**. Tap the top of the helmet with an open hand.

(1) Used when the patrol or unit is halted and to signal that the patrol leader needs a count of all Marines on the patrol or movement for his unit.

(2) After you receive and pass on the signal, count off in the order you are in, "I am 1 you are 2, I am 2 you are 3." The assistant patrol leader will get a second count to verify that it is correct.

v. **Danger Area**. Draw the right hand, palm down, across the neck in a throat-cutting motion from left to right.

(1) Used to let Marines know that there is a danger area ahead.

(2) After you receive and pass on the signal, take a knee or go to the prone position, face outboard, and provide security and await further signals by the patrol leader.

PERFORMANCE EXAMINATION CHECKLIST

MCT-COMM-1001

Given a situation when voice commands are difficult, impossible, or when silence must be maintained, while wearing a fighting load, utilize hand and arm signals to transmit commands or information.

Student Instructions:

1. You are a Marine and utilize hand and arm signals.
2. There is no time limit for this task.
3. This event reinforces the hand and arm signals mastered during Recruit training and evaluates the additional hand and arm signals trained at MCT.
4. To achieve mastery, you must complete the performance checklist and transmit commands or information.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Assess the situation or need for signaling.			
a. Determine appropriate hand and arm signal.			
2. Execute the signal, as required.			
3. Repeat signal continuously until acknowledged or the desired action is taken.			
a. Confirm signal is acknowledged.			
b. Determine if desired action has been taken, as necessary.			

REFERENCES:

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
MCRP 3-10A.3	Marine Rifle Squad	Chapter 3 and Chapter 4
TC 3-21.60	Visual Signals	Chapter 1

NOTES:

STUDENT OUTLINE

RADIO COMMUNICATIONS

MCT0202

6/27/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given a SL-3 complete VHF radio with a fill, a frequency or net ID, and a distant station, while wearing a fighting load, operate a VHF field radio to establish communication with the distant station. (0300-COMM-1005)

(2) Given a situation and formats, while wearing a fighting load, submit a message to report any activity in the assigned area. (0300-COMM-1006)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices and a diagram, identify the nomenclature of the AN/PRC-152 Multiband handheld radio set in accordance with TM 11619A/11622A/11690A-12/2. (0300-COMM-1005a)

(2) Given a list of choices, identify the operating capabilities for the AN/PRC-152 Multiband handheld radio set in accordance with TM 11619A/11622A/11690A-12/2. (0300-COMM-1005b)

(3) Given a list of choices, identify the modes of operation for the AN/PRC-152 Multiband handled radio set in accordance with TM 11619A/11622A/11690A-12/2. (0300-COMM-1005c)

(4) Given a situation and formats, while wearing a fighting load, determine the NATO report based on activity in the assigned area. (0300-COMM-1006a)

(5) Given a situation and formats, while wearing a fighting load, describe the situation based on the activity in the assigned area. (0300-COMM-1006b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to introduce the proper actions utilized to communicate in a tactical environment.

During this class we will discuss the characteristics of the AN/PRC-152, components of the AN/PRC-152, controls, connectors, indicators and their functions, installation procedures, programming single channel plain text, preventative maintenance & troubleshooting, phonetic alphabet phonetic numerals, procedural words, report formats. This lesson directly relates to the Patrolling, Offense, and Defense training you will receive while here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **CHARACTERISTICS OF THE AN/PRC-152.** (0300-COMM-1005b)

a. The AN/PRC-152 Multiband Handheld Radio is a tactical transceiver designed for use by military/agency personnel. The AN/PRC-152 provides highly reliable communications under the severe conditions of tactical operations.

b. The AN/PRC-152 provides multi-band, multi-mode operation. This enables a wide variety of applications for the user, including ground-to-ground, ground-to-air and tactical satellite communications. Over these links, the type of communication traffic includes voice and data for command and control application. Since much of this information is highly sensitive, encryption is critical. In addition, some models offer High Band (HB) operation for Very High Frequency (VHF)/ Ultra High Frequency (UHF) Line Of Sight (VULOS). The radio supports AM, FM and various data waveforms.

c. **Mode Of Operation.**

(1) VHF/UHF Line-of-Sight (VULOS). Single channel radios are normally limited to VHF/UHF/Line of sight. Provides fixed frequency communications over the VHF and UHF bands. VULOS is also operable over dedicated UHF Satellite Communications (SATCOM) Channels.

(2) Single Channel Ground and Airborne Radio System (SINCARS) is VHF frequency hopping mode of operation that is utilizes a three digit network identification (NET ID) number primarily used for ground-to-ground communications. This mode is works best using the VHF antenna. Encryption (Cipher Text) is required in order to utilize SINCARS.

d. **Frequency Range.** The Frequency Range of the AN/PRC-152 is 30.0000 MHz to 511.9999 MHz with 1 Hz Spacing per Channel. A planning range of 5 miles (8 kilometers) is used for VULOS operations, depending on verifying factors such as atmospheric conditions, terrain considerations, and environmental build up. Obstructions (such as trees, buildings, or hills) can weaken a signal or shorten a signal's range.

(1) VHF Low Band- 30.0000 MHz to 89.9999 MHz.

(2) VHF High Band- 90.0000 MHz to 224.9999 MHz.

(3) UHF Band- 225.0000 MHz to 511.9999 MHz.

e. **Features.**

(1) Up to 99 programmable system presets (numbered 01-99) containing user-specified frequencies and operating parameters.

(2) Built-In Test (BIT) for operational test and battery check; displays firmware and hardware versions.

(3) Interface to an external Portable Lightweight GPS Receiver (PLGR) or Defense Advanced GPS receiver (DAGR).

(4) Internal Hold-Up Battery (HUB) to maintain programmed information when the AN/PRC-152 main battery is removed.

(5) Automatic Scan Operation of both Cipher Text and Plain Text channels on Line-of-Sight (LOS) fixed frequency or dedicated UHF SATCOM channels.

(6) Emergency Beacon Broadcast (90.0000 MHz-511.9999 MHz) sends out emergency signal when utilized.

2. **COMPONENTS OF THE AN/PRC-152.** (0300-COMM-1005a)

a. **AN/PRC-152 Radio Assembly.** This part of the radio consists of the connectors, switches, and buttons for programming the radio. It is the Receiver-Transmitter Unit (RTU).

b. **Rechargeable Li-Ion Battery.** The Lithium-Ion Battery has a quick twist mount for easy connect and disconnect. On average, battery life is eight hours depending on usage,

weather, and condition of battery. Do not expose battery to temperatures above 160 degrees as the battery can explode if it becomes too hot. Lithium-Ion Batteries should not be exposed to acid because this will contaminate the battery and damage it, making it inoperable.

c. **VHF Antenna**. All antennae attach to the radio via the threaded N-Connector (TNC) Antenna Connector. These antennae can be 45 inches in length and operational over VHF 30.0000 MHz to 108.0000 MHz frequency range.

d. **VHF/UHF Antenna**. These antennae also attach to the radio via the TNC Antenna Connector. They can be 13.5 inches in length and are operational over the AN/PRC152's full 30.0000 MHz to 511.9999 MHz frequency range.

e. **Accessory Carrying Bag**. The accessory carrying bag is utilized to store accessories. Modular straps are sewn to the back to allow attachment to a pack, flak jacket, or SAPI plate carrier.

3. **CONTROLS, CONNECTORS, INDICATORS AND THEIR FUNCTIONS.** (0300-COMM-1005a/c)

a. **Squelch Button**. Toggles squelch on and off when pressed and released so the radio operator can listen to traffic or noise that is present on the current frequency.

b. **Push To Talk (PTT) Button**. This button is used to key a voice transmission for the radio. If the current waveform is configured for voice, the radio will continuously transmit RF over the air while the button is pressed. This button is still functional even if a handset is connected to the radio.

c. **Volume Control**. Use the "up" arrow to increase the volume. Use the down arrow to decrease the volume. This button is not lockable. The volume "up" button will also initiate the zeroize function when the function knob is in the [Z] position.

d. **Microphone**. The AN/PRC-152 has a built in microphone located next to the speaker.

e. **Cipher Switch**. The Cipher Switch has three options; PT, LD, and CT.

(1) **Plain Text (PT)**. This places the radio in Plain Text, non-encrypted mode.

(2) Load (LD). This places the radio off-line, ready to load COMSEC and Transmission Security (TRANSEC) variables from an external Type-1 fill device.

(3) Cipher Text (CT). This places the radio in the Cipher Text encryption mode.

f. **Functions Knob**. The Functions Knob has nine selections: OFF, 1, 2, 3, 4, 5, S, F, and Z.

(1) [OFF] turns the radio off.

(2) [1, 2, 3, 4, 5] selects system presets 1 through 5.

(3) [Scan (S)] places the Radio in Scan Operation.

(4) [Front Panel (F) or (FP)]. Places the radio in Front Panel Mode, permitting access to all system presets and keypad functions.

(5) [Zeroize (Z)] zeroes all programmed variables, including encryption variables.

g. **Connectors**.

(1) 6-Pin Audio/Fill Connector. The 6-Pin Audio/Fill Connector provides a connection for an optional H-250 handset or crypto fill device that uses a 6-pin connector.

(2) Antenna Connector. The Antenna Connector is a 50-ohm antenna port.

(3) Side Connector. The Side Connector provides an interface for various data devices.

(4) Battery Latch. The Battery Latch slides up to unlock battery for removal from RT.

h. **Keypad Layout**.

(1) Next/0/Blank Space Button. This button is used to switch between multiple layers of the top-level screen. If multiple views are available for the top-level screen, the [Next] indicator (Two Arrows pointing Clockwise) will be displayed on the screen. This button is also used to enter the following characters: "0", Blank Space (Press Twice.)

(2) CALL/1/ABC Button. This button is used to enter the following characters: 1, A, B, and C.

(3) LT/2/DEF Button. This Button will display the menu that is used to adjust the light display mode, light intensity, and screen contrast. This button is also used to enter the following characters: 2, D, E and F.

(4) MODE/3/GHI Button. This Button is used to select Beacon, Clone and Type-1 OTAR mode. This button is also used to enter the following characters: 3, G, H and I.

(5) 4/JKL Button. This button is used to enter the following characters: 4, J, K and L.

(6) ZERO/5/MNO Button. This button displays the Zeroize menu that allows a radio operator to reset the configuration of the entire radio or a specific component in the radio. This operation can result in the loss of communications between radios and should only be performed by an advanced user. This button is also used to enter the following Characters: 5, M, N and O.

(7) UP ARROW/6/PRQ Button. This button is used to scroll up by one in a menu screen or a scrolling list field. The "UP" operation typically involves displaying the previous item in the list. This button is also used to enter the following characters: 6, P, R.

(8) OPT/7/STU Button. This button is used to display the Option Menu that allows changes to the configuration of "run-time" operational parameters for the radio and the current waveform. All other installed waveforms will not have any items in this menu. This button is also used to enter the following characters: 7, S, T and U.

(9) PGM/8/VWX Button. This button displays the Program Menu, which allows changes to configuration items that cannot be modified while the radio is receiving or transmitting. This button is also used to enter the following characters: 8, V, W and X.

(10) DOWN ARROW/9/YZ? Button. This button is used to scroll down by one in a menu screen or a scrolling list field. The "down" operation typically involves displaying the next item in the list. This button is also used to enter the following characters: 9, Y, Z and ?.

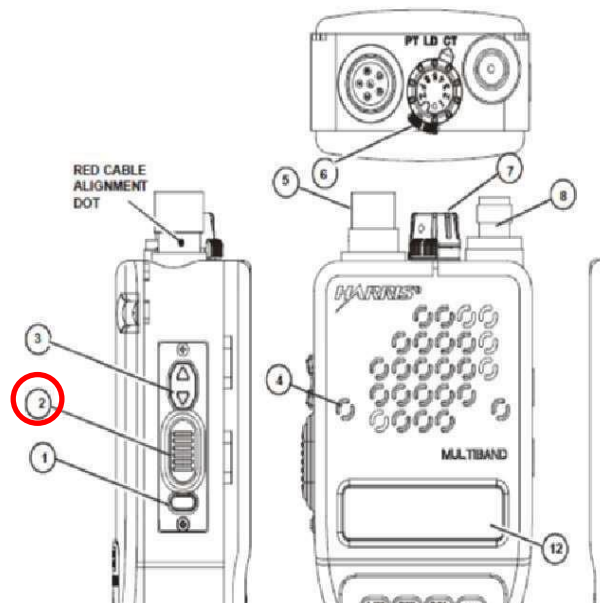
(11) CLR Button. This button is used to exit out of a screen or menu without accepting any changes to the current parameters on the screen.

(12) ENT Button. This button is used to accept or "enter" the current value on the screen and proceed to the next item to configure. Once the last item to configure is reached, Press [ENT] to return to the menu that was displayed before entering the configuration menus.

(13) PRE +/- Button. This button is used to scroll up or down through the list of system presets programmed in the radio. This button is only enabled while the function knob is in the [F] position.

(14) Left/Right Arrow Buttons. If there are multiple fields that can be selected on the current screen, these buttons are used to move between them in the direction of the button that was pressed. On some configuration screens, the left and right arrow buttons can be used to decrease or increase the current value displayed. These buttons also allow moving left or right, by one space at a time, in an edit field while updating its contents.

i. Display Indicator. The AN/PRC-152 display shows operational and programming screens.



4. INSTALLATION PROCEDURES. (0300-COMM-1005)

a. Rechargeable Li-Ion Battery. The Lithium-ion battery has a quick twist mount for easy connect and disconnect. Attach a charged battery to the transceiver by seating the battery on the base of the radio at an angle to the base, and then twist the battery into position in a clockwise direction as viewed from the bottom of the battery. The battery latch on the side of the radio snaps into the lock position when the battery is properly positioned on the radio.

b. Antenna. Screw on either of the antennae to the TNC antenna connector. If operating in Satellite Communications Mode (SATCOM), connect the optional SATCOM antenna cable to the AN/PRC-152 TNC antenna connector, and deploy the SATCOM antenna according to the separate instructions provided with the antenna.

c. Cipher Switch. Rotate the Cipher switch to [PT] or [CT] position.

d. Function Knob. Turn the function knob to [1]. This initializes the AN/PRC-152 software and performs a power-on self-test.

e. Power On Self Test (POST). When the radio is first turned on, the "HARRIS" logo screen is displayed, followed by the "FALCON III" screen. The initializing screen is displayed next and shows the radio's operating software version. This screen stays on until the radio finishes powering up. The next screen will be either POST Failed or POST PASSED. If POST Failed an audible warning will sound and user will be instructed to run a Self-Test operation on the entire radio to determine more details about the component that caused the POST Failure.

5. PROGRAMMING SINGLE CHANNEL PLAIN TEXT. (0300-COMM-1005b)

a. Utilizing the radio's preset configuration, place the function knob to [1]. This preset has already been preset by the manufacture with the require configurations to program a VULOS operation mode. Make sure that your Cipher Switch is on Plain Text (PT).

b. On the VULOS main screen, press [0] to switch between the multiple levels of the top level screen until you reach the frequency page.

c. Press the RIGHT [>] arrow to highlight the RX frequency. At this point, you can enter the low band frequency you wish to utilize and then press ENTER [ENT]. This will also change the TX frequency automatically to match the RX frequency.

d. You will need to ensure that the TX frequency matches the RX frequency before moving on. Once you have verified that both frequencies match press ENTER [ENT] again, and then press CLEAR [CLR] to return to the main screen.

6. **PREVENTATIVE MAINTENANCE & TROUBLESHOOTING.**

Preventative Maintenance is of primary importance in order to avoid equipment failures.

a. **Definition.** Preventative maintenance is the systematic, scheduled care and inspection of equipment to prevent equipment failure and to reduce downtime. Preventative Maintenance consists of keeping the equipment clean, dry, and dust-free. Use a soft brush, a moist sponge, and a cloth to keep equipment clean.

b. **Preventative Maintenance Types.** There are three types of Preventative Maintenance Checks and Services: Daily, Weekly and Monthly.

(1) **Daily.** A Daily Preventative Maintenance Check should be done when the equipment is in use. You should make sure that the radio is operational and perform a self-test to check communications using system presets.

(2) **Weekly.** A Weekly Preventative Maintenance Check should be done when the equipment is in standby condition, or when the equipment is in use. When conducting weekly PM checks, you will check the following.

(a) **Antenna.** Check for breaks or strains; repair or replace as required.

(b) **Connectors.** Inspect for dirt, corrosion, or damage. If dirty clean with a soft brush.

(c) **Protective Caps.** Ensure Protective Caps are in place if connectors are not in use.

(3) **Monthly.** A Monthly Preventative Maintenance check should be done when the equipment is in use. Check the Hold Up

Battery (HUB) on a monthly basis. While checking the HUB capacity, ensure remaining HUB life is sufficient for mission duration. If it needs to be replaced, replace it.

c. **Troubleshooting**. If communication is ever lost or not established, be sure to check the following: power, volume, correct channel, connectors/connections, and the antenna. Fail to establish positive communications, seek higher echelon of maintenance.

7. **PHONETIC ALPHABET**. (0300-COMM-1005)

The phonetic alphabet identifies spoken letters through a set of easily understood words in order to prevent the miscommunication of letters. Each of these words begins with the letter being identified.

a. **The Phonetic Alphabet Is Used To:**

(1) Transmit isolated letters such as "E7C", which is transmitted "ECHO 7 CHARLIE".

(2) Transmit each letter of an abbreviation such as "MCT", which is transmitted "MIKE, CHARLIE, TANGO".

(3) Spell unusual or difficult words such as "HOSE", which is transmitted "HOTEL OSCAR SIERRA ECHO".

b. Each letter of the alphabet has the following corresponding pronunciation:

(1) A = ALPHA.

(2) B = BRAVO.

(3) C = CHARLIE.

(4) D = DELTA.

(5) E = ECHO.

(6) F = FOXTROT.

(7) G = GOLF.

(8) H = HOTEL.

- (9) I = INDIA.
- (10) J = JULIET.
- (11) K = KILO.
- (12) L = LIMA.
- (13) M = MIKE.
- (14) N = NOVEMBER.
- (15) O = OSCAR.
- (16) P = PAPA.
- (17) Q = QUEBEC.
- (18) R = ROMEO.
- (19) S = SIERRA.
- (20) T = TANGO.
- (21) U = UNIFORM.
- (22) V = VICTOR.
- (23) W = WHISKEY.
- (24) X = XRAY.
- (25) Y = YANKEE.
- (26) Z = ZULU.

8. **PHONETIC NUMERALS.** (0300-COMM-1005)

A specific pronunciation for numerals has also been established in order to avoid miscommunication. Numbers such as those that make up the six-digit grid coordinates you used in your land navigation training are critical communication elements that must be clearly understood. The following are the pronunciations of the phonetic numerals 0 through 9:

- a. One = WUN.
- b. Two = TOO.
- c. Three = TREE.
- d. Four = FOW-ER.
- e. Five = FIFE.
- f. Six = SIX.
- g. Seven = SEV-EN.
- h. Eight = ATE.
- i. Nine = NINER.
- j. Zero = ZE-RO.

9. **PROCEDURAL WORDS.** (0300-COMM-1005)

Procedural words are words or phrases that have been assigned a meaning for the purpose of expediting tactical communication. Proper utilization of procedural words reduces the time required to communicate a message and helps to ensure concise communications. The following are essential procedural words and their definitions:

- a. **"TO..."**. Indicates to the receivers the intended party for the message.
- b. **"THIS IS..."**. Alerts the receiver as to who is sending the transmission.
- c. **"OVER"**. Alerts the receiver that the sender has ended his transmission and is awaiting a response from the receiver.
- d. **"OUT"**. Alerts the receiver that the sender has ended his transmission and requires or expects no response/answer.
 - (1) OVER and OUT have different meanings. These two procedural words are never used together.
- e. **"ROGER"**. Indicates to the sender that the receiver hears and understands the message or question.

f. **"WILCO"**. Indicates to the sender that the receiver understood the last transmission and will comply.

(1) Since the meaning of ROGER is included in that of WILCO, these two procedural words are never used together.

g. **"SAY AGAIN..."**. Indicates to the sender that the receiver did not receive or understand that last transmission and requests the transmission be repeated.

(1) Do not substitute "SAY AGAIN" for "REPEAT". "REPEAT" is a procedural word specific to call for fire and should not be used in other contexts.

h. **"I SAY AGAIN..."**. This alerts the receiver that the sender is resending the transmission or the portion requested.

i. **"READ BACK"**. This indicates to the receiver that he should resend the entire transmission back to the sender.

j. **"I READ BACK..."**. Indicates to the sender that the receiver is reading back the transmission previously sent.

k. **"CORRECTION"**. This command alerts the receiver that the sender has made an error in his transmission. The sender will continue the transmission with the last word correctly sent.

l. **"RADIO CHECK"**. This alerts the receiver that the sender requests a response indicating the strength and readability of his transmission. Conducting radio checks is necessary before any operation and should be conducted throughout the operation to ensure that both sender and receiver can communicate clearly to one another.

(1) To conduct a radio check, the sender will begin by calling the receiver and saying "[receiver] this is [sender], radio check, over".

(2) A response of "[receiver] this is [sender], ROGER, OVER" indicates the transmission is loud and clear.

(3) Or a response of "WEAK BUT READABLE, OVER" indicates that the transmission is weak but can be understood.

(4) Or a response of "WEAK AND GARBLED, OVER" indicates that the transmission is weak and unreadable.

(5) Or a response of "STRONG BUT GARBLED, OVER" indicates that the transmission has a strong signal but unreadable.

(6) The sender will then end the transmission by saying "[receiver] this is [sender], roger, out".

(7) Example: "E2B, this is E5H, radio check, over"
"E5H, this is E2B, roger, over"
"E2B, this is E5H, roger, out."

10. **REPORT FORMATS.** (0300-COMM-1006)

There are several different reports that Marines may have to transmit when seeing the enemy. These reports are very important and they must be transmitted quickly and accurately.

a. **Salute Report.** Information must be reported quickly, accurately, and as completely as possible. The acronym SALUTE provides a simple method for remembering how and what to report when sighting the enemy.

- (1) S- Size
- (2) A- Activity
- (3) L- Location
- (4) U- Unit
- (5) T- Time
- (6) E- Equipment

b. **CONTACT REPORT (CONTACREP).** A contact report is a report that communicates to higher the situation of contact with enemy forces.

- (1) Line 1. Announce "CONTACT, CONTACT, CONTACT, _____ this is _____."
- (2) Line 2. Report occurrence or type of contact.
- (3) Line 3. Report needs.
- (4) Line 4. Report time/location of contact.

- (5) Line 5. Report action taken.
- (6) Line 6. Report casualties.
- (7) Line 7. Report Remarks.
- (8) Line 8. Report Date Time Group (DD TIME MON YEAR)

PERFORMANCE EXAMINATION CHECKLIST

0300-COMM-1005

Given a SL-3 complete VHF radio with a fill, a frequency or net ID, and a distant station, while wearing a fighting load, operate a VHF field radio to establish communication with the distant station.

Student Instructions:

1. You are a Marine and must operate a VHF field radio.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and establish communication with the distant station.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Assemble a radio set.			
2. Load a net ID.			
a. Load a frequency or net ID.			
3. Conduct a communications check.			
a. Use procedural words.			
b. Operate the VHF field radio in VULOS mode of operation, as required.			
c. Operate the VHF field radio in SINCGARS mode of operation, as required.			
3. Troubleshoot, as required.			
a. Identify VHF field radio defects.			
b. Report VHF field radio defects to organizational maintenance.			

0300-COMM-1006

Given a situation and formats, while wearing a fighting load, submit a message to report any activity in the assigned area.

Student Instructions:

1. You are a Marine and must submit a message.
2. There is no time limit for this task.
3. To achieve mastery, you must complete the performance checklist and to report any activity in the assigned area.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Observe assigned area.			
2. Develop a report.			
a. Determine the appropriate NATO report format for submission.			
b. Organize information observed for an Enemy Sighting Report (SALUTE) as required (MCT-COMM-1004b).			
(1) Record unit size.			
(2) Record enemy activity.			
(3) Record location.			
(4) Record unit organization.			
(5) Record the time/date of sighting.			
(6) Record enemy equipment.			
c. Organize information for a Contact Report (CONTACREP) as required (MCTCOMM-1004a).			
(1) Announce "Contact, Contact, Contact" "receiver- this is "sender-.			
(2) Report occurrence or type of contact.			
(3) Report needs.			
(4) Report time/location of contact.			
(5) Report action taken.			
(6) Report casualties.			
(7) Report remarks.			
(8) Report date time group.			
3. Construct message.			
a. Revise the report information.			

b. Determine information requirements.			
c. Annotate significant events.			
d. Describe the situation in concise detail, as required.			
e. Determine accuracy of report information.			
4. Transmit message.			
5. Verify receipt of message.			
a. Update report information, as required.			
b. Correct report information, as required.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
TM 11619A/11622A/11690A- 12/2	AN/PRC-152 Multiband Handheld Radio Operation Manual	Chapter 3 and 4
TM 11496A-OI/2	Intermediate Maintenance Manual for AN/PRC-152(C) Multiband Handheld Radio	Entire TM
MCRP 2-10A.7	Reconnaissance Reports Guide	131 through 132
MCTP 3-01A	Scouting and Patrolling	14-1

NOTES :

STUDENT OUTLINE

NIGHT OPTICS AND SIGNALING

MCT0203

08/10/2019

LEARNING OBJECTIVES TO THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given a limited visibility device, communicate using limited visibility signals in accordance with the references. (0300-COMM-1002)

(2) Given a period of limited visibility and a limited visibility device, while wearing a fighting load, utilize limited visibility devices to remain mobile and identify objects within the capabilities of the device employed. (0300-OPTS-1001)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a communicated signal and wearing a fighting load, identify a transmitted limited visibility signal to determine individual action or if there is a need to transmit information to other individuals. (0300-COMM-1002a)

(2) Given a communicated limited visibility signal and wearing a fighting load, acknowledge receipt of signal by transmitting a confirmation to the signaler. (0300-COMM-1002b)

(3) Given a period of limited visibility and a limited visibility device, while wearing a fighting load, inspect the major components of a limited visibility device to identify and report defects. (0300-OPTS-1001a)

(4) Given a period of limited visibility and a limited visibility device that has malfunctioned, while wearing a fighting load, perform troubleshooting procedures to return the limited visibility device into an operational condition. (0300-OPTS-1001b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to provide the student with a foundational understanding required to operate in low light and dark environments in order to develop the basic rifle Marine. I will do this by covering the AN/PVS-14 Monocular Night Vision Device (MNVD), nomenclature, operating and mounting the AN/PVS 14, maintenance, and limited visibility signaling. It is imperative that you become proficient in all of these optic devices so you can effectively react to night and low-light scenarios. This lesson directly relates to your night combat marksmanship and patrolling lessons.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **AN/PVS-14 MONOCULAR NIGHT VISION DEVICE.** (0300-OPTS-1001)

a. **Description.** The AN/PVS-14 is a self-contained night vision device that enables improved night vision using ambient light from the sky (moon, sky glow, etc.). The AN/PVS-14 contains a GEN III image intensifier tube. The AN/PVS-14 can be hand-held, carried in the utility uniform, head-mounted, helmet-mounted, or mounted to a weapon that enables walking, weapons firing, short-range surveillance, map reading, vehicle driving, and administering first-aid in both moonlight and starlight. Each unit allows for vertical adjustment (by using a head strap), forward and aft adjustment, objective lens focus and eyepiece focus. The monocular is also equipped with an IR source, a low battery indicator and a gain control.

b. **Capabilities.**

- (1) Enables user to adjust fit.
- (2) IR emitting source.
- (3) Low battery indicator.
- (4) High light cut off feature: 100 sec.
- (5) Magnification - 1.0X.
- (6) Field of view (FOV) - 40 degrees.

c. **Limitations.**

- (1) Requires some ambient light.
- (2) Ambient light is reduced by clouds, tree canopies, shadows, etc.
- (3) Is less effective when looking into shadows, smoke, fog, rain, etc.
- (4) Clarity is dependent on the amount of ambient light, condition of the objective and diopter lenses, and time of life of the image intensifier.

2. **AN/PVS-14 NOMENCLATURE.** (0300-OPTS-1001)

a. **Components.** The AN/PVS-14 consists of five major components; the viewer mount, monocular, carrying case, and the shipping and storage case.

(1) Monocular. The monocular consists of the following (8) items.

(a) Objective Lens. The objective lens takes in available light and sends it to the image intensifier tube.

(b) Eyepiece Lens. The eyepiece lens allows user to see the intensified image.

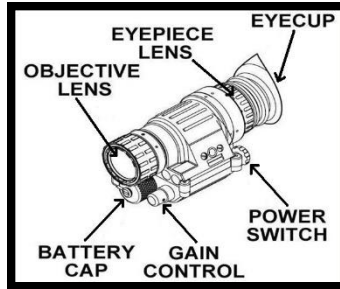
(c) Eye Cup. Helps reduce amount of light given off by the device.

(d) Power Switch. Turns the device on/off and resets the device. Also controls the IR illuminator.

1. Infrared Light Source. The IR source is a light that is invisible to the unaided eye and is used during conditions of extreme darkness. However, the light from the IR source can be detected by the enemy using night vision devices.

(e) Gain Control. The gain control allows the user to adjust gain for amount of available light. The more light the less gain that is required.

(f) Battery Cap. The battery cap encloses the battery compartment. The battery cartridge holds one battery and encloses the battery cap on older PVS-14's.



(g) Objective Focus. The Objective Focus allows the user to adjust the MNVD for a specific range.

(h) Diopter Adjustment. The Diopter Adjuster allows the user to adjust the eyepiece in order to obtain a clear picture.

(2) Viewer Mount. The Viewer Mount is used to attach the mounting bracket to the helmet and consists of the following items: headset adapter, viewer bracket, mounting bracket, buckle lever, rear bracket.

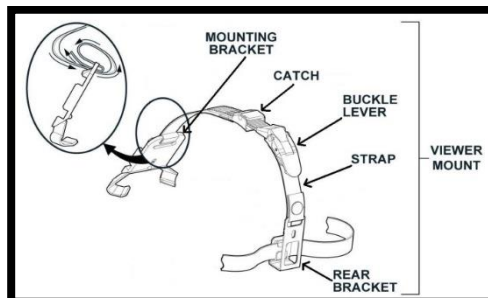
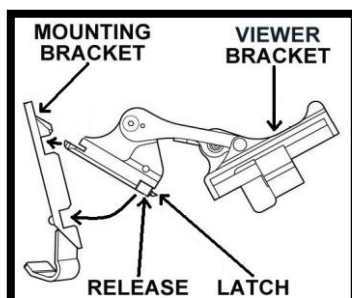
(a) Viewer Bracket. The Viewer Bracket is used to connect the Headset Adapter to the Mounting Bracket.

(b) Release Latch. Depressing the Release will move the latch so the Viewer Bracket can be removed from the Mounting Bracket.

(c) Mounting Bracket. The Mounting Bracket is used to attach the Viewer Bracket to the helmet, and can be installed with the existing helmet screws, with or without the viewer mount strap.

(d) Buckle Lever. The Buckle Lever secures the Viewer Mount.

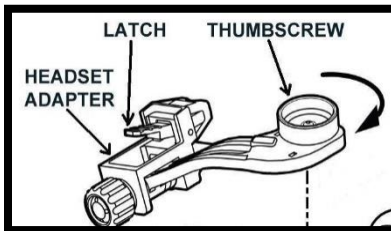
(e) Rear Bracket. The Rear Bracket secures the Viewer Mount to the back of the helmet.



(f) Headset Adapter. The headset adapter mounts the AN/PVS-14 to the Viewing Bracket. It also allows the user to rotate the monocular so that it may be used with the left or right eye.

1. Latch. The latch releases the Headset Adapter from the Viewer Mount.

2. Thumb Screw. The thumb screw attaches the Headset Adapter to the AN/PVS-14.



(3) Carrying Case. The carrying case is provided for transportation and protection of the monocular, viewer mount, batteries, and accessories.

(a) Light Interference Filter. Protects the goggle wearer from eye damage caused by laser energy.

(b) Battery Cap/Cartridge. The battery cap encloses the battery compartment. The battery cartridge holds two AA batteries and encloses the battery cap on older PVS-14's.

(c) Sacrificial Window. This is a replaceable shield that protects the lens during operation in adverse conditions.

(d) Neck Cord. Cord that functions as a lanyard for retaining the goggle lens cap to the goggles.

(e) Tethering Cord. Cord that allows you to carry the 3x magnifier or compass.

(f) Compass. Enables the operator to see an azimuth.

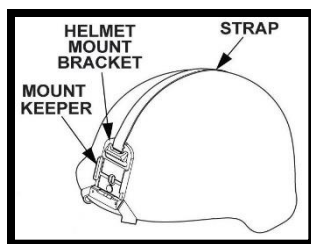
(g) 3x Magnifier. The lens assembly that can be added to the objective lens to magnify the field of view.

3. OPERATING THE AN/PVS-14. (0300-COMM-1002)

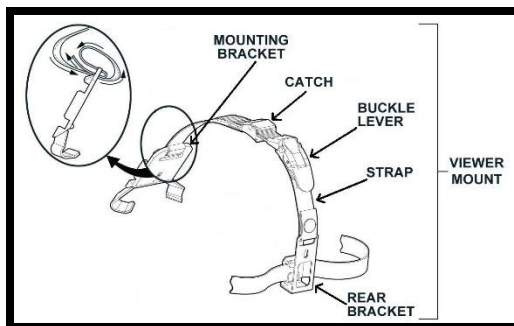
- a. Turning On The Monocular. To operate the monocular, turn the power switch clockwise to the "ON" position. Ensure that you have a green glow.
- b. Setting Diopter Adjustment. Look into the eyepiece and set the diopter adjustment for the clearest view of the image intensifier screen.
- c. Adjusting Objective Focus. Observe an image and adjust the objective lens for best focus.
- d. Infrared Light Source. Pull and turn the power switch to the IR position and verify operation of the IR ON indicator light. Look at an object, not more than 30 inches away, and ensuring an increase in brightness.
- e. Gain Control. With the monocular on, observe an object and rotate gain control verifying changes in image brightness.
- f. Turning The Monocular Off. To power off the monocular, turn the power switch counter-clockwise to the "OFF/Reset" position.

4. MOUNTING THE AN/PVS-14. (0300-OPTS-1001)

- a. Installing The Viewer Mount.
 - (1) Make sure the viewer mount strap is laced onto the mounting bracket.
 - (2) With catch in forward most position, place the viewer mount strap over the top of the helmet center.
 - (3) Hook the rear bracket on the center back of the helmet and lay the strap with the mounting bracket over the top of the helmet.
 - (4) Hook the mounting bracket in the center of the front lip of the helmet and hold in place.



(5) With the buckle lever open, take up the slack in the strap using the catch. Close the buckle lever.

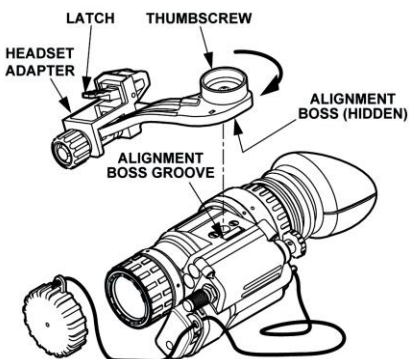


b. Installing The Headset Adapter.

(1) Install the headset adapter on the monocular by aligning the thumbscrew and tightening.

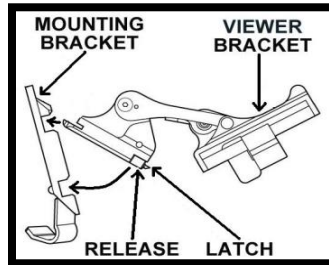
(2) Alignment boss on the headset adapter fits into the groove on the monocular. Ensure the boss on the adapter fits into the groove on the monocular.

(3) Ensure prongs under thumbscrew are present and have a good connection to AN/PVS 14 to mitigate false contact and NVD's turning on and off.



c. **Installing The Viewer Bracket On The Mounting Bracket.**

Insert the top edge of the viewer bracket under the keeper on the mounting bracket and rotate downward until the latch engages. To release the viewer bracket from the mounting bracket, press the release button and pull forward and up.



d. **Installing The Headset Adapter/Monocular Into Viewer Bracket.**

(1) Place the headset adapter installed on the monocular in the socket of the viewer bracket.

(2) Set your eye relief by depressing the side lever on the viewer bracket. Carefully move the monocular fore or aft until the eyecup comfortably seals around the eye.

5. **AN/PVS-14 MAINTENANCE.** (0300-OPTS-1001a)

a. **Preventative Maintenance.**

(1) Inspect all lenses (objective, eyepiece, IR lens and highlight cut-off window) for dirt, fingerprint residue, chips, or cracks.

(2) Inspect external surfaces for cracks or damage. Scratches, cracks, and gouges are OK if operation is not affected.

(3) If necessary, clean and dry lenses with water and lens tissue.

b. **Troubleshooting.**

(1) **Monocular Fails To Activate.**

(a) Turn the power switch to RESET/OFF position then ON.

(b) Make sure the battery is in correctly.

(2) IR Source Fails To Activate. Refer to higher level of maintenance.

(3) Poor Image Quality. Refocus the optic.

(4) Light Visible Around Eyecup. Readjust for proper eye relief distance.

(5) Head Mount Or Helmet Mount Socket And Head Mount/Helmet Mount Adapter Latch Does Not Catch. Check for dirt and clean. If damaged, return to higher level of maintenance.

6. **LIMITED VISIBILITY SIGNALING**. (0300-COMM-1002b)

The most common types of visual signals are hand-and-arm, flag, pyrotechnic, and ground-to-air signals. However, Marines are not limited to these types of signals and may use what is available. Chemical light sticks, flashlights, and other items can be used provided their use is standardized within a unit and understood by Marines and units working in the area. The only limit is the Marine's initiative and imagination. Also, be aware that for certain hand and arm signals there is a different type of movement used for nighttime.

a. **Employ Red Lens Flashlight**. Flashlights are one of the most commonly used night time signaling devices, used for signaling between sentry post and patrols or to direct vehicles. Red filters should be used whenever possible in order to preserve the driver's night vision.

b. **Employ Directional Chemlights**. Chemical lights can be used in place of a flashlight and have less effect on a motor vehicle operator's night vision

c. **Employ Infrared Emitters/Chemlights**. Invisible light is emitted by an infrared emitting source and is all but impossible to see with the unaided eye. Some type of night vision device is needed to observe. It offers greater security than visible light because it is invisible to the naked eye, it is more effective for tactical situations, and it is visible from the air. But, because it is an active device, it is easily detected by active and passive devices.

d. **Limitations**.

(1) The range and reliability of visual communications are significantly reduced during periods of poor visibility and when terrain restricts observation.

(2) They may be misunderstood.

(3) They are vulnerable to enemy interception and may be used for deception purposes.

PERFORMANCE EXAMINATION CHECKLIST

0300-OPTS-1001

Given a period of limited visibility and a limited visibility device, while wearing a fighting load, utilize limited visibility devices to remain mobile and identify objects within the capabilities of the device employed.

Student Instructions:

1. You are a Marine and must utilize limited visibility devices.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and utilize limited visibility devices to remain mobile and identify objects within the capabilities of the device employed.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Inspect SL-3 components for accountability and serviceability.			
a. Inspect major components. (MCT-OPTS-1001a)			
(1) Inspect eye piece lens.			
(2) Inspect objective lens.			
(3) Inspect battery cap.			
(4) Inspect gain control.			
(5) Inspect power switch.			
b. Identify defects.			
c. Report defects.			
2. Assemble/mount device.			
a. Install battery.			
b. Mount the limited visibility device over your non-dominant eye.			
3. Use controls and indicators.			
a. Turn device on.			
b. Focus device.			
c. Adjust gain control knob.			
4. Conduct movement around obstacles.			
a. Detect/negotiate obstacles.			
b. Identify objects using the limited visibility device.			
5. Troubleshoot device, if required. (MCT-OPTS-1001b)			
a. Replace batteries.			
b. Adjust head mount/helmet mount adapter.			
c. Identify low battery indicator light ON.			
6. Disassemble/remove device.			
a. Dis-mount the device.			
b. Remove batteries.			
7. Perform preventive maintenance.			
a. Clean the limited visibility device, as required.			
b. Inspect major components for defects.			
(1) Lens.			
(2) Housing.			
(3) Switches/knobs.			

0300-COMM-1002

Given a limited visibility device, communicate using limited visibility signals in accordance with the references.

Student Instructions:

1. You are a Marine and must communicate using limited visibility signals.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and communicate using limited visibility signals in accordance with the references.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Initiate signal.			
a. Employ limited visibility signals.			
2. Receive response.			
a. Recognize limited visibility signals. (MCT-COMM-1002a)			
3. Transmit confirmation. (MCT-COMM-1002b)			
a. Respond to signal.			

REFERENCES:

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
TM 10271A-OR/1C	Operator's Manual, Monocular NVD, (MNVD) AN/PVS-14	Entire Manual
TM 10271A-10/1	Operator's Manual, Monocular NVD, AN/PVS- 14	Entire Manual
MCTP 3-01A	Scouting and Patrolling	Entire Manual

NOTES:

STUDENT OUTLINE

COMBAT HUNTER

MCT0204

6/27/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given an area to observe, with or without the aid of observation devices, while wearing a fighting load, conduct observation to detect anomalies. (0300-CMBH-1001)

(2) Given an area to observe, while wearing a fighting load, identify anomalies to determine if the anomalies are threats. (0300-CMBH-1002)

(3) Given a scenario, apply the components of the decision cycle (OODA) process to achieve a decision with a bias for action. (0300-CMBH-1004)

b. ENABLING LEARNING OBJECTIVES.

(1) Given an area to observe, with or without the aid of observation devices, while wearing a fighting load, conduct a detailed search to detect anomalies. (0300-CMBH-1001a)

(2) Given an area to observe, with or without the aid of observation devices, while wearing a fighting load, build a panoramic sketch to aid in the detection of anomalies. (0300-CMBH-1001b)

(3) Given a list of choices, identify the six behavioral domains in accordance with MCIP 3-02.1i. (0300-CMBH-1002a)

(4) Given an area to observe, while wearing a fighting load, establish a baseline to determine if the anomalies are threats. (0300-CMBH-1002b)

(5) Given a list of choices, identify the steps of the decision cycle (OODA) process in accordance with MCIP 3-02.1i. (0300-CMBH-1004a)

(6) Given a scenario, develop probable courses of action that facilitate a decision with a bias for action.
(0300-CMBH-1004b)

STUDENT INFORMATION

OVERVIEW. The purpose of this lesson is to familiarize you with combat hunter techniques. I will do this by covering observation techniques which will aid in detecting anomalies, the six behavioral domains, identifying anomalies, non-observable indicators, components of the OODA loop, and steps of the OODA loop. This lesson relates to Patrolling, Defensive Fundamentals, Improvised Explosive Devices, and Military Operations on Urban Terrain.

CLASS PREPARATION: Read this outline prior to class. Bring sketch paper and a pencil.

OUTLINE.

1. OBSERVATION TECHNIQUES TO DETECT ANOMALIES. (0300-CMBH-1001a)

Observation techniques include the hasty search, the detailed search, and maintaining observation.

a. **Hasty Search.** The hasty search technique is the first phase of observing a target area. The observer conducts a hasty search for any enemy activity. This should take approximately 10 seconds. The hasty search is carried out by making quick glances at specific points, terrain features, or other areas that could conceal the enemy. The observer should not sweep his eyes across the terrain in one continuous movement. This will prevent him from detecting motion. The observer should view the area closest to his position first, since it could pose the most immediate threat. The observer then searches further out until the entire target area has been searched. The hasty search is effective because the eyes are sensitive to the slightest movement occurring within a wide arc of the object. This area is called peripheral vision. The eye must be focused on a specific point to have this sensitivity. When the observer sees or suspects a target, he uses the binoculars or the observation telescope for a detailed view of the suspected target area. The following should be considered when conducting a hasty search:

(1) The observer makes the search either unaided or with the assistance of optics, making quick overlapping glances from right to left at specific points throughout the area.

(2) From years of reading and scanning from the left to the right side of the page, the brain has become conditioned to skip details. To avoid missing details while conducting an observation, scan the surroundings from right to left.

(3) If available, binoculars are used in the hasty search.

b. **Detailed Search.** After the hasty search, the observer starts a detailed search using the overlapping strip method. Normally, the area nearest the observer offers the greatest danger; therefore, the search should begin there. The observer systematically searches the terrain from his right flank in a 180-degree arc, 50 meters in depth. After reaching the opposite flank, the observer searches the next area nearest his post. The search should be in overlapping strips of at least 10 meters to ensure total coverage of the area. The detailed search should cover as far out as the observer can see, always including areas of interest that attracted the observer during the hasty search. The following should be considered when conducting a detailed search:

(1) Optics should be stable and supported.

(2) One of the dangers of detailed searches is focus lock, where the observer becomes fixated on an object. To prevent focus lock it is important to maintain peripheral vision.

(3) When a threat is detected, a transition should be made to a higher-powered optic, if available.

(4) Obstacles, such as bushes and shadows, may conceal the enemy's position. Burn through these obstacles by focusing on a part of the object, such as the edge of the bush or the shadow and adjust focus until the obstacle becomes blurry. This will provide a clear picture of what is beyond that obstacle.

(5) In an urban environment, an observer may only be able to see through a small crack or hole in a wall. By placing one of the barrels of the binoculars up to the hole, the observer will be able to conduct observation of an entire area.

c. **Establishing A Baseline.** When a Marine is involved in any type of mission, he is making observations and creating his baseline. When the Marine identifies an anomaly, he immediately begins a reasoning process. The Marine immediately tries to recognize the anomaly through his recognition process. This process is based first upon his experience, then his training, and eventually upon the mental file folders that he has created. Next, or often at the same time, the Marine is conducting an analysis of the anomaly. This analysis is based upon his ability to recognize the anomaly, in addition to the facts he has available (e.g., current observation, intelligence). Finally, he must observe the context and relevance of the current situation. It is through the behavioral domains that a Marine can profile an area and come to a reasonable conclusion. Context and relevance define a baseline. We collectively measure knowns and unknowns against the baseline to determine the anomalies. Context is the background, environment, framework, setting, or situation surrounding an event or occurrence. Relevance is the relationship of something to the present situation. A Marine must make a decision based upon his analysis of the anomaly. The use of common language allows a Marine to report and articulate his decision and subsequent actions.

d. **Maintaining Observation.** The observer must memorize as much of the area as possible. He should make mental notes of prominent terrain features (i.e., positive space) and other areas that may offer cover and concealment (i.e., negative space) for the enemy. This allows him to become familiar with the terrain as he searches. These become the key points of interest for his hasty searches. This cycle of a hasty search, followed by a detailed search, should be repeated every 15 to 20 minutes. Repetition allows the observer to become accustomed to the area and closely examine various points. If time allows, develop a terrain sketch as a reference or to pass on to relief. Marines should alternate observers approximately every 20 to 30 minutes. When maintaining observation, the observer keeps movement of his head and body to a minimum. He should not expose his head any higher than is necessary to see the area being observed. The observer should devise a set sequence for searching, to ensure coverage of the entire terrain. Since it is entirely possible that the hasty search may fail to detect the enemy, observers should periodically repeat a detailed search. When the light is to the observer's front, the enemy will be able to see the light reflected from the observer's optical devices. It is more tiring for the Marine to observe when the light shines in his eyes.

e. **Record.** To record is the ability to save and recall what was observed. Usually, the observer has mechanical aids, such as writing utensils, logbooks, sketch kits, tape recordings, and cameras to support the recording of events. However, the most accessible method is memory. The ability to record, retain, and recall depends upon the observer's mental capacity, alertness, and ability to recognize what is essential to record.

2. **SIX BEHAVIORAL DOMAINS.** (0300-CMBH-1002a)

The behavioral domains are used to describe human behavioral characteristics. The more cues observed by the user within each domain, the stronger the evidence is to make a sound conclusion. One standalone cue, from a single domain, is rarely strong enough to make a tactical decision.

a. **Kinesics.** Kinesics, or nonverbal language, is the interpretation of body movements, gestures, and facial expressions as a means of communication. Kinesics also includes grooming habits and the positioning of the body in space. People give and respond to thousands of nonverbal messages every day and react to wordless messages emotionally, often without understanding why. Kinesics cues may be learned, innate, or a mixture of both. The eye wink, thumbs up, and military salutes or gestures are examples of learned gestures. Eye blinking, throat clearing, and facial flushing are examples of innate kinesics. Laughing, crying, shoulder shrugging, and other signals are mixed gestures because they originate as an innate action, but cultural rules shape their timing, energy, and use. Typically, facial expressions of disgust, surprise, and other primary emotions are universal across all cultures.

b. **Biometric Cues.** Biometric cues are the interpretation of physiological reactions. They are instinctive reactions to a stimulus. Histamines, adrenaline, and endorphins all elicit a human body response, such as redness, swelling, sweating, and fixed pupils. Understanding these indicators can warn of intent. Biometric cues are biological and physiological responses that are impossible to hide. Histamines cause a reddening of the skin. This physiological response can be caused by anger or embarrassment. The redness is most noticeable on the face, ears, and neck. The addition or absence of adrenaline or endorphins can cause a person to turn pale in preparation for fight, flight, or freeze. The amount or lack of dilation in the human eye is a physiological and biological response to an external stimulus.

c. **Proxemics**. Proxemics is the interpretation of spatial relationships within the context of cultural normalcies, tactical considerations, and psychosocial factors. The interpretation of these relationships determines the dynamics of human interaction and reaction to their surroundings. Proxemics is the proximity or distance to and from other people and is based upon physiological, sociological, and physical principles. The closer your enemy is to you, the less skill is needed to harm or kill you. By observing at greater distances, a Marine increases the distance in both time and space between himself and a potential threat. This gives a Marine more time to make decisions. When a threat is perceived, the natural inclination is to move away from it. Manipulating the time and distance gap by moving away from the perceived threat provides standoff and creates valuable time for the observer to react to a situation. When a threat is not perceived or the observer is in a comfortable environment, the natural inclination is to approach the situation, diminishing standoff and reaction time.

d. **Atmospherics**. The environmental mood is interpreted consciously through the five senses and subconsciously through intuition. To the combat hunter, atmosphere is how a place looks, sounds, tastes, feels, and smells. Every baseline has an atmosphere. Paying attention to changes in the atmosphere of a community or individual and how it affects the baseline, will allow you to capture or kill the enemy before they can stage an attack. Atmospherics for the combat hunter can be glaringly obvious. For example, an obvious sign would be shops closing as the patrol approaches; a very subtle change would be fewer children than normal in a particular area. These indicators can alert Marines to imminent danger. The most obvious indicators are the sudden absence of normal routines, patterns, and attitudes of the local populace or the presence of abnormal activity.

e. **Geographics**. Geographics, or the human environment, is the study of the physical geography, weather, and the human environment within that area. Geographics also include the interpretation of the relationships between people and their physical surroundings. People who are familiar with the geographics of an area will act, walk, and drive differently than persons who are unfamiliar with the area. Geographics are a combination of two specific items—the geographical terrain and the inhabitants or human environment within the area. Geographics are further described as anchor points, habitual areas, natural lines of drift (e.g., pathways), reference points, and landmarks.

f. **Heuristics**. Heuristics are a rapid method of mentally imprinting and labeling observed behaviors. Heuristics are stereotypes or a tactical shortcut for the brain, providing just enough information to draw a reasonable conclusion. The Marine already has file folders for these. All of a Marine's impressions will come from heuristics. This can be both good and bad, because a corrupt file folder can create a heuristic that will give him an altered sense of reality, leading to negative results. Heuristics are separate from the other behavior domains, because elements of all the other behavior domains make up heuristics. A heuristic is the brain making a prototypical match against the file folders. By using heuristics, a Marine is able to draw a conclusion and accelerate through the OODA loop.

3. **IDENTIFY ANOMALIES**. (0300-CMBH-1002b)

The combat hunter observes the environment to establish a baseline and identify anomalies or action indicators within the environment. A baseline is an initial set of critical observations or data. It is used to establish what is normal for comparison at another time. A baseline is dynamic and will continually evolve. A baseline is everything in its natural state of existence. Everything has a baseline. An anomaly is a deviation from the baseline. It is the presence, absence, or change of something that creates a deviation from the baseline.

a. **Baseline Establishment**. Everything has a baseline, especially the human environment. A Marine creates a baseline by looking at the current situation, context, and relevance of his observations. He then measures that against the template, prototypical matches, and known or suspected enemy Tactics Techniques and Procedures (TTP). Baselines are dynamic and in a constant state of evolution. A baseline must be constantly updated to incorporate changes and identify anomalies.

b. **Anomaly**. An anomaly is an observation that rises above or falls below the baseline. Examples of an anomaly could be a vehicle out of place, the lack of or presence of people, or a sudden change in the mood of an area. The presence of such anomalies may indicate a potentially important change. Every anomaly must be analyzed.

c. **Combat Rule Of Threes**. In most cases, a single cue is not enough to make a decision, unless that cue is an immediate threat to the Marine (i.e., the inherent right to self-defense). When three anomalies are detected a decision must be made. Read

all cues in a cluster. Three or more cues are enough to make a rational decision. Once a cluster has been developed, a conclusion may be developed and a decision be made.

4. **NON-OBSERVABLE INDICATORS.**

Non-observable indicators can be both subtle and obvious. Although the combat hunter will not see these indicators with his eyes, he will use his other senses to collect and identify them. Noises, smells, and other sensory activators are important to the combat hunter. The smell of sweat, bug spray, or rifle oil can be detected from several yards away. Cigarette smoke and cooking odors can be smelled for up to a thousand yards away. Certain noises may indicate the presence of the quarry. Those sounds may include talking, whistling, loose gear, metallic sounds, and chopping. Some of these sounds can be heard at great distances. The absence of noise, such as insects and birds ceasing to chirp, will also indicate the presence of the enemy.

a. **The Sixth Sense.** The combat hunter must never ignore what is called the sixth sense or intuition. The sixth sense is subtle, subconscious sensory inputs that have not been processed into conscious, recognizable, and logical thoughts by the brain yet. In the absence of recognizable facts, a combat hunter may have to rely upon his sixth sense.

b. **Sounds And Odors.** Sounds and odors may be affected by wind in the following ways: If the wind is blowing down the track (i.e., toward the combat hunter), sounds and odors may be carried to the hunter. If the wind is blowing up the track (i.e., away from the hunter), the hunter must be extremely cautious. The wind also carries sounds toward the enemy. The hunter can determine wind direction by dropping a handful of dust or dried grass, from shoulder height. By pointing in the same direction the wind is blowing, the hunter can localize sounds by cupping his hands behind his ears and turning slowly. When sounds are loudest, the hunter is facing the origin. In calm weather (i.e., no wind), air currents that may be too light to detect can carry sounds to the hunter. If he keeps the wind in his face, sounds and odors will be carried to him from his objective or from the party being tracked.

5. **COMPONENTS OF THE OODA LOOP.** (0300-CMBH-1004a)

The battlefield is constantly changing and requires a unique ability to deal with the civilian populace, decentralized

command and control, and the authority and consequences of individual actions. The OODA loop is the constantly revolving cycle that the mind goes through when dealing with tasks that range from the mundane to the most complicated. This cycle follows the pattern of observe, orient, decide, act (OODA). This cycle applies to friendly forces, enemy forces, and noncombatants. It is how the mind deals with the outside environment and translates it into action. Proper application of this cycle will allow Marines to make the appropriate decision quicker than their enemies.

a. **Combat Multipliers**. There are supporting and subsidiary means or items that significantly increase the relative combat strength (i.e., power) of a force while actual force ratios remain constant. These means or items are tactics, leadership, munitions, optics, training, and morale. The combat multipliers commonly associated with the combat hunter are tactical cunning and tactical patience.

(1) **Tactical Cunning**. Tactical cunning is the art of employing fundamental skills of the profession of arms in shrewd and crafty ways to out-think and out-adapt the enemy. Some of these methods are thinking, deception, ruse, feint, and demonstration (e.g., show of force):

(a) **Thinking**. Thinking tactically like your enemy is effective to determine their most likely or most dangerous course of action (COA).

(b) **Deception**. Deception includes those measures designed to mislead the enemy by manipulation, distortion, or falsification of evidence to induce the enemy to react in a manner prejudicial to the enemy's interests. The goal of deception is to make an enemy more vulnerable to the effects of weapons, maneuvering, and the operations of friendly forces.

(c) **Ruse**. In military deception, a trick of war designed to deceive the adversary, usually involving the deliberate exposure of false information to the adversary's intelligence collection system

(d) **Feint**. In military deception, an offensive action involving contact with the adversary conducted for the purpose of deceiving the adversary as to the location and/or time of the actual main offensive action.

(2) Tactical Patience. Tactical patience is the application of wargaming and the manipulation of operating tempo within the decision making process (i.e., OODA). It determines when the most advantageous conditions for success are reached. An example of tactical patience would be while conducting an ambush; i.e., Marines may allow a reconnaissance or advanced guard to pass the ambush site in order to destroy the main body in the kill zone. Wargaming is a step-by-step process of action, reaction, and counteraction for visualizing the execution of each friendly course of action in relation to enemy courses of action and reactions. It explores the possible branches and sequels to the primary plan, resulting in a final plan and decision points for critical actions

6. STEPS OF THE OODA LOOP.

a. Observe. Observation, the first step in the OODA loop, is a search for information that is relative to the tactical situation. The OODA loop includes outside information, which could include the environment; TTP; and the physical, mental, and moral situation. It must be emphasized that this is not a passive step and requires an active effort to seek out all of the available information by whatever means possible.

b. Orient. During orientation, the Marine uses information to form an awareness of the circumstances. As more information is received, he updates his perceptions as needed. Different people require different levels of detail to perceive an event. Orientation emphasizes the context in which events occur, so that people may facilitate their decisions and actions. Orientation helps to turn information into understanding. It is understanding that leads to making good decisions.

c. Decide. Making a decision is a conscious activity following orientation. The decision is based upon the Marines' perceived observations, training, experience, rules of engagement, orders, and directives. Through repetitive training, some decisions can become automatic or reflexive; for example, immediate action drills for weapon malfunctions.

d. Act. It is crucial to understand that the action (i.e., implementation of the decision) taken will influence the environment. Any change in the environment necessitates that a Marine must recycle through the OODA loop, reassessing the situation. Speed is rapidity of action. It applies to both time and space. Speed over time is tempo or the consistent ability to operate quickly. Speed over distance or space is the

ability to move rapidly. Both forms of speed are genuine sources of combat power, making speed a weapon. The more factors there are to consider, the more difficult it is to analyze them quickly. Knowing where to focus and what to ignore is crucial.

PERFORMANCE EXAMINATION CHECKLIST

0300-CMBH-1001

Student Instructions:

1. You are a Marine and must conduct observation.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and conduct observation to detect anomalies.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Conduct a hasty search.			
a. Observe from near to far.			
b. Conduct overlapping glances from right to left.			
c. Identify areas of interest.			
2. Conduct a detailed search. (0300-CMBH-1001a)			
a. Systematically search terrain.			
b. Conduct overlapping strip method.			
3. Build panoramic sketch. (0300-CMBH-1001b)			
4. Establish a baseline.			
a. Establish an initial set of critical observations or data.			
b. Determine the current situation.			
c. Identify situational context.			
d. Identify situational relevance.			
5. Maintain observation.			
6. Record information.			
a. Collect information.			
b. Validate information.			
7. Report observations utilizing the appropriate NATO reporting format(s).			

0300-CMBH-1002

Given an area to observe, while wearing a fighting load, identify anomalies to determine if the anomalies are threats.

Student Instructions:

1. You are a Marine and must identify anomalies.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and determine if the anomalies are threats.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Conduct observation.			
2. Establish a baseline. (0300-CMBH-1002b)			
3. Detect anomaly.			
a. Identify the presence of something that creates a deviation from the baseline as required.			
b. Identify the absence of something that creates a deviation from the baseline as required.			
c. Identify a change of something that creates a deviation from the baseline as required.			
d. Utilize the Combat Rule of Threes as required.			
4. Identify the six (6) behavioral domains.			
5. Report observation using the appropriate reporting format/s.			

REFERENCES :

NUMBER	TITLE	PAGE
MCIP 3-02.1i	Combat Hunter	Entire Manual
MCTP 3-01A	Scouting and Patrolling	6-3 through 6-5, and figure 6-5

MCTP 3-01E	Sniping	Section 5 and figure 5-14
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NOTES :

STUDENT OUTLINE

TACTICAL COMBAT CASUALTY CARE (TCCC)

MCT0205

10/8/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) Given a casualty, while wearing a fighting load, perform tactical field care on a casualty to prevent further injury or death. (0300-MED-1001)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a casualty, while wearing a fighting load, render care under fire to prevent further injury or death. (0300-MED-1001a)

(2) Given a casualty that you have provided immediate first aid, while wearing a fighting load, conduct patient handover with next echelon of care. (0300-MED-1001b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to give you some simple knowledge on immediate care of an injured or wounded Marine during an on-going battle against an enemy force on the field of battle, in a training environment. We will cover care under fire, Tactical Combat Casualty Care, and tactical evacuation. This lesson directly relates to Patrolling, Defense, Military Operations on Urban Terrain, and the Culminating Exercise training you will receive here at Marine Combat Training Battalion.

CLASS PARTICIPATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **CARE UNDER FIRE.** (0300-MED-1001a)

Evaluation of a casualty is necessary to identify and treat all life-threatening conditions and other serious wounds. Rapid and accurate evaluation of the casualty is the key to providing effective first aid. When performing care under fire, return fire as directed or required before providing first aid. Determine if the casualty is alive or dead. In combat, the most likely threat to the casualty's life is from bleeding. Attempts to check for airway and breathing will expose the rescuer to enemy fire. DO NOT attempt to provide first aid when your own life is in imminent danger. In a combat situation, if you find a casualty with no signs of life, no pulse, no breathing, DO NOT attempt to restore the airway. DO NOT continue first aid measures. Provide care to the living casualty. Direct the casualty to return fire, move to cover, and administer self-aid (stop bleeding), if possible.

a. **Fire Superiority.** Reducing or eliminating enemy fire may be more important to the casualty's survival than the treatment you can provide. If the casualty is unable to move and you are unable to move the casualty to cover and the casualty is still under direct enemy fire, have the casualty *play dead*. Once enemy fire has been suppressed, conduct the following:

(1) In a battle-buddy team, approach the casualty (use smoke or other concealment if available) using the most direct route possible.

(2) Administer lifesaving hemorrhage control.

(3) Determine the relative threat of enemy fire versus the risk of the casualty bleeding to death. When evaluating a casualty it is imperative that an accurate determination be made as to whether the bleeding is life threatening or not. This determination will dictate the methods to be used to control the bleeding. Blood vessels are the conduit which transports blood pumped by the heart to the body. The blood vessels consist of arteries, arterioles, capillaries, venules, and veins.

(a) **Arteries.** Arteries are vessels that carry blood high in oxygen content away from the heart to the farthest reaches of the body. Arteries flow into arterioles.

(b) **Arterioles.** Arterioles are small branches of arteries that lead to the capillaries.

(c) Capillaries. Capillaries are tiny blood vessels that connect arterioles (the smallest division of an artery) with venules.

(d) Venules. Venules are small veins that go from capillaries to veins.

(e) Veins. A blood vessel that carries blood that is low in oxygen content from the body back to the heart.

(f) It is imperative that first aid providers quickly determine if a casualty is losing blood. Many injuries can result in blood vessels being torn which result in excessive blood loss. Excessive loss of blood can quickly lead to the death of the casualty if not stopped.

(4) If the casualty has severe, life-threatening bleeding from an extremity or has an amputation of an extremity, administer lifesaving hemorrhage control by applying a tourniquet from the casualty's IFAK before moving the casualty.

(a) Pull the free end of the self-adhering band through the buckle and route through the friction adapter buckle.

(b) Place the tourniquet, 2 to 3 inches above the wound on the injured extremity. Blood vessels can retract so it is important to place the tourniquet as high as possible or at least 2-3 inches above the injury, if possible.

(c) Pull the self-adhering band tight around the extremity and fasten it back on itself as tightly as possible.

(d) Twist the windlass until the bleeding stops. This should not require more than 2-3 turns.

(e) Lock the windlass in place within the windlass clip.

(f) Secure the windlass with the windlass strap.

(g) Assess for absence of a distal pulse.

(h) Place a *T* and the time of the application on the casualty with a marker.

(i) Secure the commercial tourniquet in place with tape.

b. **Hemorrhage Control**. The only treatment that should be given at the point of injury is a tourniquet to control life threatening extremity bleeding. Move the casualty, his weapon, and mission-essential equipment when the tactical situation permits. Recheck bleeding control measures (tourniquet) as soon as behind cover and not under enemy fire.

2. **TACTICAL FIELD CARE**. (0300-MED-1001)

Once under cover and not under hostile fire, perform tactical field care. When evaluating and/or treating a casualty, seek medical aid as soon as possible. DO NOT stop first aid. If the situation allows, send another person to find medical aid.

a. **Form A General Impression Of The Casualty As You Approach (Extent Of Injuries, Chance Of Survival)**. If a casualty is being burned, take steps to remove the casualty from the source of the burns before continuing evaluation and first aid. Ask in a loud, but calm, voice: Are you okay? Gently shake or tap the casualty on the shoulder.

(1) Determine the level of consciousness by using the mnemonic AVPU: A = Alert; V = responds to Voice; P = responds to Pain; U = Unresponsive. To check a casualty's response to pain, rub the breastbone briskly with a knuckle or squeeze the first or second toe over the toenail. If casualty is wearing individual body armor, pinch his nose or his earlobe for responsiveness. If the casualty is conscious, ask where his body feels different than usual, or where it hurts.

(2) If the casualty is conscious but is choking and cannot talk, stop the evaluation and begin appropriate first aid. In order for air to flow freely into and out of the lungs, the airway must remain unobstructed. The ability to move air freely can be compromised when a foreign body becomes lodged in the throat (while eating for example).

(a) The airway may be partially or completely blocked. In either case removing the obstruction is vital. In cases of complete blockage, removing the blockage quickly is critical if the casualty is to survive. If a casualty has a mild airway obstruction (able to speak or cough forcefully, may be wheezing between coughs) do not interfere except to encourage the casualty. If the casualty has a severe airway obstruction

(poor air exchange and increased breathing difficulty, a silent cough, cyanosis [bluish tinge to the skin], or inability to speak or breathe) continue with abdominal or chest thrusts. You can ask the casualty one question, *Are you choking?* If the casualty nods yes, help is needed.

1. Abdominal Thrusts. Clearing a conscious casualty's airway obstruction can be performed with the casualty either sitting or standing. To perform abdominal thrusts stand behind the casualty. Wrap your arms around the casualty's waist. Make a fist with one hand. Place the thumb side of the fist against the abdomen slightly above the navel and well below the tip of the breastbone. Grasp the fist with the other hand. Give quick backward and upward thrusts. Each thrust should be a separate, distinct movement. Thrusts should be continued until the obstruction is expelled or the casualty becomes unconscious.

2. Chest Thrusts. To perform chest thrusts stand behind the casualty. Wrap your arms under the casualty's armpits and around the chest. Make a fist with one hand. Give backwards thrusts. Each thrust should be performed slowly and distinctly with the intent of relieving the obstruction. Continue to give abdominal or chest thrusts, as required. Give abdominal or chest thrusts until the obstruction is clear, you are relieved by a qualified person, or the casualty becomes unconscious. If the casualty becomes unresponsive, lay him down and then start mouth-to-mouth resuscitation procedures.

(b) Identify And Control Bleeding. Check for bleeding by reassessing any tourniquets placed during the care under fire phase to ensure they are still effective. Perform a blood sweep of the extremities, neck, axillary, inguinal, and extremity areas. Exposure is only necessary if bleeding is detected. Place your hands behind the casualty's neck and pass them upward toward the top of the head. Note whether there is blood or brain tissue on your hands from the casualty's wounds. Place your hands behind the casualty's shoulders and pass them downward behind the back, the thighs, and the legs. Look to see if there is blood on your hands from the casualty's wounds. If life-threatening bleeding is present, stop the evaluation and control the bleeding by either direct pressure or pressure dressing.

1. Apply Direct Pressure. If bleeding is not life threatening, apply direct pressure by exposing the wound. Place sterile gauze or dressing over the injury site and apply fingertips, palm or entire surface of one hand and apply direct

pressure. Pack large, gaping wounds with sterile gauze and apply direct pressure. Once the bleeding has been controlled, it is important to check a distal pulse to make sure that the dressing has not been applied too tightly. If a pulse is not felt, adjust the dressing to re-establish circulation. The emergency bandage must be loosened if the skin distal to the injury becomes cool, blue, numb, or pulseless.

2. Apply A Pressure Dressing. When applying a bandage always use the casualty's emergency bandage. Open the plastic dressing package. Apply the dressing, white-side down (sterile, non-adherent pad) directly over the wound. Wrap the elastic tail (bandage) around the extremity and run the tail through the plastic pressure bar. Reverse the tail while applying pressure and continue to wrap the remainder of the tail around the extremity, while continuing to apply pressure directly over the wound. Secure the plastic closure bar to the last turn of the wrap. Check the emergency bandage to make sure that it is applied firmly enough to prevent slipping without causing a tourniquet-like effect. In combat, while under enemy fire, a tourniquet is the primary means to control bleeding. It allows the individual, his battle buddy, or the combat medic to quickly control life threatening hemorrhage until the casualty can be moved away from the firefight. Always treat life threatening hemorrhage while you and the casualty are behind cover.

(c) Assess for breathing and chest injuries by exposing the chest and check for equal rise and fall and for any wounds. Look, listen, and feel for respiration. If the casualty is breathing place the casualty in the recovery position. If the casualty is not breathing open the airway.

1. Head-Tilt Chin-Lift Method. To open the airway using the head-tilt chin-lift method kneel at the level of the casualty's shoulders. Place one hand on the casualty's forehead and apply firm, backward pressure with the palm to tilt the head back. Place the fingertips of the other hand under the bony part of the lower jaw and lift, bringing the chin forward. Do not use the thumb to lift. Do not completely close the casualty's mouth. Do not press deeply into the soft tissue under the chin with the fingers. DO NOT use this method if a spinal or neck injury is suspected.

2. Jaw-Thrust Method. To open the airway using the jaw thrust method kneel above the casualty's head (looking toward the casualty's feet). Rest your elbows on the ground or

floor. Place one hand on each side of the casualty's lower jaw at the angle of the jaw, below the ears. Stabilize the casualty's head with your forearms. Use the index fingers to push the angles of the casualty's lower jaw forward. Use this method if a spinal or neck injury is suspected. If you are unable to maintain an airway after the second attempt, use the head-tilt chin-lift method. Do not tilt or rotate the casualty's head. If the casualty's lips are still closed after the jaw has been moved forward, use your thumbs to retract the lower lip and allow air to enter the casualty's mouth.

3. Check For Breathing. While maintaining the open airway position, place an ear over the casualty's mouth and nose, looking toward the chest and stomach. Look for the chest to rise and fall. Listen for air escaping during exhalation. Feel for the flow of air on the side of your face. Count the number of respirations for 15 seconds. Take appropriate action.

4. Recovery Position. Place the casualty in the recovery position by rolling him as a single unit onto his side, placing the hand of his upper arm under his chin, and flexing his upper leg. Watch the casualty closely for life-threatening conditions and check for other injuries, if necessary. If the casualty is not breathing, immediately seek medical aid. If the casualty resumes breathing at any time during this procedure, the airway should be kept open and the casualty should be monitored. If the casualty continues to breathe, he should be transported to medical aid or medical treatment facility in accordance with the tactical situation.

(d) If the casualty has a penetrating chest wound and is breathing or attempting to breathe, stop the evaluation to apply an occlusive dressing and position or transport with the affected side down, if possible.

(e) Check for an exit wound. If found, apply an occlusive dressing.

(f) Dress all nonlife-threatening injuries and any bleeding that has not been addressed earlier with appropriate dressings.

(g) Check the casualty for burns by looking carefully for reddened, blistered, or charred skin. Also check for singed clothes. If burns are found, stop the evaluation and begin treatment. Administer pain medications and antibiotics (casualty's combat pill pack) if available. Document the injuries and the treatment given on the casualty's own DD Form

1380, Tactical Combat Casualty Care (TCCC) Card (found in the IFAK), if applicable.

3. **TACTICAL EVACUATION.** (0300-MED-1001b)

Once the casualty is provided appropriate first aid, initiate the tactical evacuation phase. Transport the casualty to the evacuation site. Monitor the patient for shock and treat as appropriate. Continually reassess casualty until a medical person arrives or the patient arrives at a military treatment facility.

a. **Signs And Symptoms Of Shock.** Check the casualty for signs and symptoms of shock.

- (1) Sweaty but cool skin.
- (2) Pale skin.
- (3) Restlessness or nervousness.
- (4) Thirst.
- (5) Severe bleeding.
- (6) Confusion.
- (7) Rapid breathing.
- (8) Blotchy blue skin.
- (9) Nausea and/or vomiting.

b. **Position The Casualty.** Procedures for positioning the casualty include moving the casualty under a permanent or improvised shelter to shade him from direct sunlight. Lay the casualty on his back unless a sitting position will allow the casualty to breathe easier. Elevate the casualty's feet higher than the heart using a stable object so the feet will not fall. Do not loosen clothing if in a chemical area. Loosen clothing at the neck, waist, or anywhere it is binding. Prevent the casualty from getting chilled or overheated. Using a blanket or clothing, cover the casualty to avoid loss of body heat by wrapping completely around the casualty. Ensure no part of the casualty is touching the ground, as this increases loss of body heat.

c. **Calm And Reassure The Casualty.** Calm and reassure the casualty by taking charge and show self-confidence. Assuring the casualty that he is being taken care of. Watch the casualty closely for life-threatening conditions and check for other injuries, if necessary. Seek medical aid.

PERFORMANCE EXAMINATION CHECKLIST

0300-MED-1001

Given a casualty, while wearing a fighting load, perform tactical field care on a casualty to prevent further injury or death.

Student Instructions:

1. You are a Marine and must perform tactical field care on a casualty.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and prevent further injury or death.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Ensure that you and the casualty are no longer under direct enemy fire.			
2. Communicate the situation to the unit leader. (0300-MED-1001b)			
3. Ensure the tactical situation allows for time to treat casualty before initiating any medical procedures.			
4. Determine level of consciousness. (0300-MED-1001a)			
5. Assess the casualty's airway. (0300-MED-1001a)			
a. Check airway using Look, Listen, and Feel method, as required.			
b. Clear a blocked airway as required.			
6. Assess the casualty for chest injuries. (0300-MED-1001a)			
a. Check for an exit wound.			
b. Check for penetrating chest wounds.			
c. Treat the chest injury.			

7. Identify and control major bleeding. (0300-MED-1001a)			
a. Conduct blood sweep.			
b. Apply direct pressure on affected artery, as required.			
c. Apply a pressure dressing, as required.			
d. Apply a tourniquet, as required.			
e. Apply hemostatic agents.			
f. Reassess tourniquet, as required.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
TC 4-02.1	First Aid	Entire Manual

NOTES :

STUDENT OUTLINE

IMPROVISED EXPLOSIVE DEVICES

MCT0206

08/07/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given a suspected threat, detection equipment, marking equipment, T/O weapon, combat load, while in the conduct of a mission, perform individual actions in response to a suspected explosive threat to confirm presence of all threats in a lane, route, or area with no injury to friendly personnel or damage to equipment. (MCCS-IED-1001)

(2) Given rules of engagement, mission essential gear and equipment, as a member of a unit in the conduct of a mission, and a detonated explosive device, perform individual actions in response to an improvised explosive device (IED) attack to minimize additional threat and reduce the effects. (MCCS-IED-1002)

b. ENABLING LEARNING OBJECTIVES.

(1) Given an operational environment with a suspected threat wearing a fighting load, conduct a check of the area to ensure the area is free of additional threats from 5 meters and out to 25 meters in accordance with JIEDDTF 05-23. (MCCS-IED-1001a)

(2) Given an operational environment with a suspected explosive threat wearing a fighting load, assume a safe standoff distance in order to avoid injury to friendly personnel or damage to equipment. (MCCS-IED-1001b)

(3) Given an operational environment with a suspected threat wearing a fighting load, utilize visible marking methods to indicate the location of a threat in accordance with JIEDDTF 05-23. (MCCS-IED-1001c)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to give you the skills necessary to prepare for operating in an IED environment. We are going to discuss: the definition of an IED, IED components, indicators, and how to react to an IED. This lesson directly relates to the Combat Hunter, Patrolling, Offense, and Military Operations on Urban Terrain training you will receive here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. DEFINITION.

An Improvised Explosive Device (IED) is a device placed or fabricated in a makeshift manner incorporating destructive, lethal, noxious, pyrotechnic, or incendiary chemicals and designed to destroy, incapacitate, harass, or distract. It may incorporate military components, but is normally devised from nonmilitary components.

2. CHARACTERISTICS. IEDs are unique in nature because the builder has had to improvise with the materials at hand. They are designed to defeat a specific target or types of targets and they generally become more difficult to detect and protect against as they become more sophisticated. The degree of sophistication depends on the ingenuity of the designer and the tools and materials available. IEDs of today are extremely diverse and may contain any type of firing device or initiator, plus various commercial, military, or contrived chemical or explosive fillers. Cached and stockpiled munitions or Explosive Remnants of War (ERW) within the current theater of operations may provide the explosive materials to "would be" enemy bombers.

3. IED COMPONENTS.

a. **Switch.** A switch is a device for making, breaking, or changing an electrical or nonelectrical connection in an explosive booby trap or IED. The three main categories of switches are time, command, and victim-operated.

(1) **Time.** Time initiated IEDs are designed to function after a preset delay, allowing the enemy to escape or target enemy forces which have created a patterns and routines. Timers

used include chemical and mechanical such as a washing machine timer, or electronic.

(2) Command. Command-initiated IEDs allow the enemy to choose the opportune moment to initiate. They are normally used against targets that are in transit or have a routine along a route/location. They include but are not limited to non-electrical command pull, electrical command wire, radio-controlled devices such as cellular telephones, and remote car openers and alarms.

(3) Victim. A victim-operated IED is a means of attacking an individual or group of individuals. The victim or victim's initiate the IED. These can be emplaced and left for long periods of time, and does not require someone to operate. There are various types of initiation devices, which include pull or trip, pressure, pressure release, movement-sensitive, light-sensitive, and proximity.

b. Initiator. The initiator is any device that starts a detonation. Usually, the initiator is an electric or nonelectric blasting cap; however, enemies have demonstrated the ability to make improvised initiators. Examples of nonelectric initiators include, but are not limited to, flame or spark initiators, friction-initiated devices, chemical initiators, and percussion initiators.

c. Main Charge. The main charge constitutes the bulk explosive component of an explosive booby trap or IED and can be configured for directional effects. Common explosive filler used in explosive booby traps/IEDs comes from military ordnance and Home Made Explosive (HME). Military ordnance provides an immediate explosive filler and ready-made fragmentation effect. Explosive booby traps/IEDs may contain military, commercial, and homemade explosive fillers. Many explosive booby traps/IEDs include common hardware (ball bearings, bolts, nuts, nails) to enhance shrapnel.

d. Power Source. A power source can store and release electrical or mechanical energy to initiate an explosive booby trap or IED main charge. The most common power source is a battery, with sizes ranging from small batteries to car and truck batteries. Enemies have also used alternating current (such as a local power supply in a home or office) to provide the power source for an IED.

e. **Container**. The container is an item or vessel that commonly houses main explosive components of an explosive booby trap or IED. Containers serve two basic purposes: confinement of the main explosive components and protection from the elements. Containers are the source of primary fragmentation. Containers should not be confused with the materials used to conceal an explosive booby trap or IED. Soda cans, pipes, crockpots, pressure cookers, backpacks, plastic bags, jugs, briefcases, vests, or satchels are examples of containers. Explosive booby traps/IEDs can range in size and have been placed inside animal carcasses, tires, and under trash piles for concealment purposes. While the materials used in concealing an explosive booby trap or IED can have secondary fragmentation effects, they are primarily used to conceal the explosive booby trap or IED from visual detection.

f. **Enhancements**. In addition to these five components, an explosive booby trap or IED may contain enhancements. An enhancement is any optional component deliberately added to an explosive booby trap or IED as a secondary hazard. These can be as simple as fuel and shrapnel, or complex such as chemical and biological.

4. **INDICATORS**.

a. **Employment**. IEDs can be used in multiple fashions. The following are some examples:

(1) IEDs can be concealed with just about anything such as trash, boxes, tires, and dead animals. They can be placed in, on, or under a target to include unsecured or abandoned vehicles.

b. **Indicators**. The primary indication of an IED will be a change in the baseline (something new on the route that was not there before, anomalies). The enemy may leave behind visual indicators of an emplaced IED by accident or, in some cases, on purpose to inform the local population or for use as an aiming reference point. Vigilant observation for these subtle indicators can increase the likelihood of IED detection by friendly forces before detonation.

(1) Disguised moveable IEDs can consist of vehicle borne IEDs (VBIED), suicide vehicle borne IEDs (SVBIED), and personnel borne IEDs (PBIED).

(2) VBIED. A VBIED is a vehicle filled with explosives in an improvised manner. It is not operated by an individual but normally parked along roads, buildings, streets, or inside buildings. Common indicators of a VBIED are suspiciously abandoned along the side of road or near a building, noticeable sagging of the vehicle (increased weight due to explosives), darkened or covered windows to conceal the vehicle's contents, a newly painted vehicle to cover body alterations, odd license plates, and signs of tampering.

(3) SVBIED. A SVBIED is a vehicle that is filled with explosives and driven by an individual to his death to attack convoys, check points, buildings or other high value targets. It can be a car, truck, or van filled with explosives. Common indicators of an SVBIED are non-compliant vehicles speeding towards a checkpoint.

(4) PBIED. An IED worn or carried by a person either willingly or unwillingly, such as a vest, belt, backpack, box, briefcase, etc., in which the person houses the whole IED or principal IED components and/or serves as the delivery or concealment means for explosives with an initiating device. A PBIED is often initiated by the person wearing the IED (suicide); however, not all PBIEDs are triggered by the person wearing the IED (proxy). Most common indicators of a PBIED are an individual with excessive clothing displaying nervous and erratic behavior, who fails to follow orders given.

(5) 5m and 25m Searches. While on patrol one must always stay vigilant, and maintain situational awareness in case of an enemy attack. This enables personnel to be aware of possible booby traps or explosive hazards, such as IEDs. The most effective means is to search in a near to far method, which begins within 5m to 25m searches before stopping to avoid stopping on top of an IED. While in a vehicle or on foot.

(a) 5 meter Searches. When identifying a position to halt, or while patrolling. Visually check the area 5 meters around yourself or vehicle. Look for disturbed earth and suspicious objects, loose bricks in walls, and security ties on streetlights or anything out of the ordinary. Start your search at ground level and continue up above head height. Then conduct a physical check for a radius of 5 meters around your position. Be systematic, take your time, and show curiosity. If the tactical situation permits, use a white light or infrared (IR) light at night. If in an armored vehicle, remain mounted during

your 5 meter check to take advantage of the vehicle's protection.

(b) 25 meter Searches. Add to the 5 meter check when the patrol or convoy leader decides to occupy an area for any length of time. Once 5 meter checks are conducted, continue visually scanning out to 25 meters. Conduct a physical search for a radius of 25 meters around your position. Look for IED indicators and anything out of the ordinary, and investigate as needed.

5. HOW TO REACT TO AN IED.

An IED is a form of attack by the enemy. Any IED that detonates should be treated as an enemy contact, but should always be anticipated even though the IED did not detonate. Contingency plans and rehearsals in accordance with individual actions are key to concluding the contact. If you find an IED before it explodes, you must treat it like it will explode at any moment. The enemy at a firing point may be waiting for more Marines to gather around the device before setting it off. He may be moving from an observation point (OP) to the firing point. Training on basic tactics, techniques, and procedures (TTP) will enable you and your unit to win the engagement.

a. The 5 Cs. The five "Cs" represent a simple set of guidelines that you should use when you encounter a suspected IED: (Confirm, Clear, Cordon, Check, Control)

(1) Confirm. You should always assume the device will explode at any moment, and not spend unnecessary time in the area. It is preferable to confirm from a safe distance and adequate cover using as minimal number of personnel as possible. Use all tools or equipment at your disposal, to include moving to a better vantage point. The use of optics can greatly increase your ability to find indicators of the devices, or any of the (5) components. Once the IED has been confirmed, report the Direction, Description, and Distance to other members of your squad/patrol. Designate someone to maintain observation, losing eyes on the suspected IED will increase the difficulty of finding it again. In the event of an IED strike, also pass number of casualties and injuries sustained. To avoid alerting enemy personnel that you discovered the device, establish brevity codes.

(a) Marking. The location of IED only when situation permits, and do not over expose yourself to the enemy

threat. Methods of marking can be with manufactured flags, or of field expedient means such as chemlights or spray paint. Marking of the suspected IED should be with a proximity of it, and not directly on top of it. The safest process is to use a marker as a point of reference and pass along information of: Direction, Distance, and Description to the location of the suspected threat.

(2) Clear. Evacuate the area to a safe distance (around 300 meters) utilizing the 5 meter physical check, and 25 meter visual check method. If it is a VBIED, you will need more standoff. Get out of the IED's line-of-sight. Assess whether your distance and cover is adequate. Direct people out of the danger area, and do not allow anyone to enter other than those responsible for rendering the IED safe, such as EOD. Question, search, and detain as needed. When you move to a new location, always check for secondary IEDs. Always assume that the found IED is a bait/hoax and that the real IED is near the "secure" location you will most likely want to use. Marines should continuously scan their immediate surroundings for more IEDs.

(3) Cordon. Establish blocking positions to prevent vehicle and foot traffic from approaching the IED. Immediately search the safe area for secondary IEDs before occupying it. Make maximum use of available cover, but be especially careful if a piece of terrain or cover looks too good to be true. These will need to be checked more cautiously. Establish 360 degree security and dominate the area, each member of the unit should have an assigned sector of fire. Scan inward and away from your position in your sector of fire. Most likely, the enemy is watching and waiting to make his move. Randomly check people leaving the area to deter attacks, and do not set a pattern/routine. Establish obstacles to control approaches to security positions. Insurgents may try to attack local security forces using a VBIED.

(4) Check. Check the immediate area around the site, and cordon control positions for secondary devices using the 5&25 meter checks. Expand the search area by using equipment and optics as time/enemy threat permits. Be on the lookout for devices as well as suspicious personnel, triggermen/lookouts, and potential attack points.

(5) Control. To ensure only authorized access, control the area inside the cordon. Only emergency services (medical, firefighting, or EOD) should be allowed to enter the cordon. All personnel and vehicles should enter and exit the cordoned

area through control points. All civilian and non-essential military traffic should be diverted away from the cordon. To ensure that no tampering occurs, maintain (from a safe distance) a visual/line-of-sight (optics, RCO, binoculars) observation on the IED. A 360-degree security around the cordon should be maintained until EOD has given the all-clear signal.

(6) Reacting to an Unexploded IED. Reacting to an unexploded IED follows all of the 5 Cs.

(7) Reacting to an Exploded IED. Reacting to an exploded IED is similar to reacting to an unexploded IED. The only additional action(s) is/are to treat and evacuate the wounded personnel, and/or deal with damaged vehicles and equipment. All other steps should be observed due to the fact of IEDs are rarely employed in singularity. Follow the rule of: Where there is (1) IED, there are more IEDs.

PERFORMANCE EXAMINATION CHECKLIST

MCCS-IED-1001

Student Instructions:

1. You are a Marine and must perform individual actions in response to a suspected explosive threat.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist perform individual actions in response to a suspected explosive threat to confirm presence of all threats in a lane, route, or area with no injury to friendly personnel or damage to equipment.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Observe for indicators.			
a. Employ observation techniques.			
b. Establish a baseline.			
c. Detect anomalies.			
d. Identify indicators.			
2. Provide security, as directed.			
a. Take cover.			
b. Communicate the location of an explosive threat.			
c. Maintain your sector of fire.			

d. Clear explosive site of personnel.			
3. Conduct 5 & 25 meter checks, as required. (MCCS-IED-1001a)			
a. Detect anomalies.			
b. Communicate the presence of an explosive threat.			
4. Mark suspected threat(s), as applicable.			
a. Assume a safe standoff distance is based on the situation. (MCCS-IED-1001b)			
b. Maintain safe distance from threat.			
c. Indicate the location of the explosive threat.			
d. Utilize visible marking methods. (MCCS-IED-1001c)			
5. Report suspected threat(s), as required.			
a. Describe indicators.			
b. Describe location of indicators.			
6. React to follow-on attack, as required.			
a. Perform individual action drills for an attack.			
7. Resume mission, as directed.			
a. Conduct continuing actions.			

MCCS-IED-1002

Student Instructions:

1. You are a Marine and must perform individual actions in response to an improvised explosive device (IED) attack.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and perform individual actions in response to an improvised explosive device (IED) attack to minimize additional threat and reduce the effects.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Take available cover.			
2. Report direction, distance and casualties to unit leader.			
a. Describe location of blast.			
b. Communicate casualties within the unit.			

3. Check for secondary devices, as applicable.			
a. Conduct 5 & 25 meter check.			
4. Provide local security.			
5. Execute follow-on actions, as ordered.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
MCIP 3-02.1i	Combat Hunter	Entire Manual
JIEDDTF 05-23	Joint Improvised Explosive Device Defeat Organization Tactics, Techniques and Procedures Handbook	23

NOTES :

STUDENT OUTLINE

HANDLE DETAINEES

MCT0207

08/10/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) Given rules of engagement, a detainee, capture tag (DD Form 2745), readily available materials, flex cuffs, and assigned weapon, while wearing a fighting load, handle detainees in accordance with the ROE and the Laws of War. (0300-PAT-1006)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify key terms associated with detainee operations in accordance with MCRP 3-10A.2. (0300-PAT-1006a)

(2) Given a list of choices, identify the rule(s) for searching a detainee in accordance with MCRP 4-11.8D. (0300-PAT-1006b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to teach you the proper procedures for handling a detainee. I will do this by covering the acronym STRESS. This lesson relates to the Patrolling training you will receive here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be ready to actively participate.

OUTLINE.

1. SEARCH. (0300-PAT-1006a)

The initial search is a good pat down of the detainee's entire body, checking all pockets and areas where the detainee could

conceal weapons or documents. This is a very fast process. Immediate requirement is to secure evidential material that could be jettisoned or destroyed before the individual is detained. The search of persons is to be conducted in the following way:

a. **Oral Warning**. An oral warning, through an interpreter if necessary, must be issued.

b. **Personnel**. There must be a minimum of two Marines present, one to search and one to provide protection to the searcher and act as a witness.

c. **Females And Children**. Females and children under 14 should to be searched by female Marines. Male Marines may search any person using a hand held metal detector. For female detainees, care must be taken to ensure compliance with international law. Females search females. If none are available, the order of precedence for searchers is medical personnel, members of the clergy, and if none of the aforementioned are available, the senior officer on site.

(1) Mixed gender searches can be deemed necessary when speed and security is priority. All efforts should be made to not have mixed gender searches.

(2) The onsite supervisor, or the ranking individual, will want to control mixed gender searches to prevent allegation of sexual misconduct.

(3) If it is necessary to conduct a mixed gender search, a more mature and experienced personal should be the Marine conducting the search.

d. Do not try to humiliate the subject.

e. Be professional and avoid being over-familiar with or intimidating to the subject.

f. **Procedures For Searching**. The search should be conducted in pairs. The observer should provide protection for the searcher and observe both the searcher and the subject. The following points should be observed:

(1) Establish the identity of the subject and determine the ownership of any baggage.

(2) Inform the subject that they are about to be subjected to a body search and why.

(3) To avoid being kicked, kneed or head-butted the searcher should not stand directly in front of or behind the subject.

(4) The searcher should not be distracted or intimidated and should avoid eye contact with the subject.

(5) The observer should watch for non-verbal communication (e.g. increased nervousness).

(6) The searcher should avoid crossing the line of fire of the observer.

(7) The subject should stand with legs slightly apart and arms raised 30 degrees sideways. Do not spread eagle the subject against a vehicle or wall as this may provide an opportunity for forensic evidence to be wiped off hands.

(8) Command the subject to empty all pockets. Items should be placed in a plastic bag in view of the subject and marked with his identification and thoroughly searched if necessary.

(9) The search should be conducted quickly and systematically from head to foot, down one side and up the other covering all parts of the body front and back. Attention should be paid to pockets, waist bands and all external body depressions: chest, groin, closed hands, armpits, small of back, center of back, and between buttocks.

(10) Use a stroking motion to squeeze clothing and feel for objects through clothing - do not pat. Limbs should be searched using both hands with thumbs and index fingers touching.

(11) Equipment, such as hand held metal detectors (e.g. Hoodlum), may be used to help process/search large numbers of people.

(12) Search all associated baggage.

(13) Confiscate any prohibited items and preserve as evidence.

g. **Criteria For Detaining An Individual.**

(1) An Individual can be detained for several reasons. The most obvious reason why is if there is contraband or items of importance found on the individual. Some examples of this is, weapons that do not fit the baseline of the area, intelligence, illegal items according to the law of the area, or resisting.

(2) There is also a list called a Be On the Look Out for list (BOLO list). Typically individuals on the BOLO are High Value Targets. Essentially a target that the enemy commander requires for successful completion of their mission. These can range from anywhere from carrier, enemy commanders, bomb makers, or anyone whom NATO forces deem to be a threat and that they need to be detained for further questioning.

(3) Each environment has different Standard Operating Procedures for use of force when detaining an individual. The general framework for use of force in any given situation is the Rules of Engagement (ROE's). Keep in mind, the ROE's will change in each area that you operate in.

(4) All persons captured, detained or retained during the course of a military operation are considered a Detained Person until their status is determined by higher military authority. At the level Marines work at when searching individuals, the only classification that Marines are authorized to give an individual is Detained Person.

2. **TAG.** (0300-PAT-1006)

a. Each detainee will be tagged using DD Form 2745, Enemy Prisoner of War Capture Tag, which provides the only official detainee tracking number prior to receiving an internment serial number (ISN). If there is not a DD Form 2745 available, a field expedient method is allowed. All confiscated items will be linked to the detainee using the ISN.

b. There are three parts of the tag. One that will remain on the detainee, one to go with the captured items, and one to remain with the capturing unit for their records.

c. When filling out the tag it is paramount to ensure that all scrapes, cuts, and bruises on the individual are annotated. This is to protect Marines against being accused of misconduct.

d. Additionally, annotate in detail each article that you have taken as evidence against the individual.

1 DATE AND TIME OF CAPTURE		2 SERIAL NO XXXXXX1A	
3 NAME		4 DATE OF BIRTH	
6 RANK	8 SERVICE NO		
7 UNIT OF EPW		8 CAPTURING UNIT	
9 LOCATION OF CAPTURE (Grid coordinates)			
10 CIRCUMSTANCES OF CAPTURE	11 PHYSICAL CONDITION OF EPW	12 WEAPONS, EQUIPMENT, DOCUMENTS	
1 DATE AND TIME OF CAPTURE		2 SERIAL NO XXXXXX1B	
3 NAME		4 DATE OF BIRTH	
6 RANK	8 SERVICE NO		
7 UNIT OF EPW		8 CAPTURING UNIT	
9 LOCATION OF CAPTURE (Grid coordinates)			
10 CIRCUMSTANCES OF CAPTURE	11 PHYSICAL CONDITION OF EPW	12 WEAPONS, EQUIPMENT, DOCUMENTS	
1 DATE AND TIME OF CAPTURE		2 SERIAL NO XXXXXX1C	
3 NAME		4 DATE OF BIRTH	
6 RANK	8 SERVICE NO		
7 UNIT OF EPW		8 CAPTURING UNIT	
9 LOCATION OF CAPTURE (Grid coordinates)			
10 DESCRIPTION OF WEAPONS, SPECIAL EQUIPMENT, DOCUMENTS			

ENEMY PRISONER OF WAR (EPW) CAPTURE TAG (Part A) For use of this form, see AR 190-8, the proponent agency is DCSOPS Attach this part of tag to EPW. (Do not remove from EPW) 1 Search - For weapons, military documents, or special equipment 2 Silence - Prohibit talking among EPWs for ease of control 3 Segregate - By rank, sex, and nationality 4 Safeguard - To prevent harm or escape 5 Speed - Evacuate from the combat zone 6 Tag - Prisoners and documents or special equipment DA Form 5976, JAN 91	
UNIT RECORD CARD (Part B) Forward to Unit (Capturing unit retains for records.) Use string, wire, or other durable material to attach the appropriate section of this form to the EPW's equipment or property DA Form 5976, JAN 91	
DOCUMENT/SPECIAL EQUIPMENT/WEAPONS CARD (Part C) Attach this part of tag to EPW's retained property. (Do not remove from property.) As a minimum, the tag must include the following information: -- Item 1, date and time of capture. -- Item 8, capturing unit. -- Item 9, place of capture (grid coordinates). -- Item 10, circumstances of capture (how the EPW was captured). DA Form 5976, JAN 91	

3. REPORT. (0300-PAT-1006a)

a. As detainees are collected and processed, the Geneva Convention require that their information be forwarded to the appropriate authorities and failure to do so may bring unwanted scrutiny upon the US Government for neglecting its duties under international laws. This also includes detainees captured by US Armed Forces and transferred to other powers for detention or those received from other powers for detention by US forces – either temporarily or permanently. Report anything that a detainee says to you or tries to say to another detainee to the S-2.

4. EVACUATING. (0300-PAT-1006a)

a. Marines quickly transport detainees from their point of capture to collection points to avoid risks associated with that location. Speedy removal from familiar surroundings lessens the likelihood of an attempted escape and reduces the exposure of the detainee to the battlefield. To facilitate the rapid movement of detainees to collection points, Marines make maximum use of

available transportation. Unit leaders must coordinate the prompt evacuation of detainees out of the battlespace. The evacuation chain moves from the forward collection point to the rear area holding areas. Throughout the evacuation process, Marines treat detainees, humanely by ensuring that they are not used to shield areas or facilities from attack and retained for psychological operations. Food (e.g., religiously appropriate), potable water, appropriate clothing, shelter, and medical attention are provided if necessary. They are provided protective facilities and equipment in case of CBRN attack. Rigorous security is maintained to prevent escape and to protect US forces. The ability to conduct religious practices (e.g., prayer) is provided.

5. **SEGREGATING.** (0300-PAT-1006a)

a. Marines segregate detainees into separate groups of officers, noncommissioned officers, enlisted, civilians, males, females, nationality, and political figures. Segregation, and the resulting interruption of the enemy chain of command, is crucial to the security and control of prisoners. Detainees are prevented from communicating with one another or from making audible clamor, such as chanting, singing, or praying. Uncooperative detainees are silenced by muffling them as appropriate. The detainees may also be silenced to prevent them from planning escapes or disruptions. Only trained and certified intelligence personnel will conduct intelligence interrogations.

6. **SAFEGUARDING.** (0300-PAT-1006a)

a. Safeguarding refers to the Marine's obligation to protect the safety of detainees and ensure the custody and integrity of confiscated items. Marines must safeguard detainees against combat hazards, from conflict with each other, and from improper treatment. Marines also safeguard detainees by ensuring that they receive humane treatment. It is the responsibility of the unit that captures and holds detained persons to ensure their safety throughout all phases of detention operations. Marines provide detainees with sanitation facilities and supplies as soon as possible to permit them to disinfest themselves and their clothing. Soap and washing facilities are also made available when possible. Marines coordinate and ensure that medical care, equipment, and supplies are administered to detainees. Although they are not normally assigned to medical facilities to process or guard captives, Marines may be tasked to escort prisoners to

medical facilities for care. Marines process these captives after medical personnel classify their physical condition.

PERFORMANCE EXAMINATION CHECKLIST

0300-PAT-1006

Given rules of engagement, a detainee, capture tag (DD Form 2745), readily available materials, flex cuffs, and assigned weapon, while wearing a fighting load, handle detainees in accordance with the ROE and the Laws of War.

Student Instructions:

1. You are a Marine and must handle detainees.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and in accordance with the ROE and the Laws of War.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Search the detainee.			
a. Disarm the detainee.			
b. Secure the detainee.			
c. Perform the duties of the cover man.			
d. Perform the duties of the search man.			
e. Identify the items a detainee may keep.			
f. Communicate discovered threat to the friendlies.			
g. Identify critical intelligence information.			
2. Tag detainee and items collected.			
a. Identify the items a detainee may keep.			
b. Complete the three parts of a capture tag.			
c. Organize and mark seized material.			
3. Report number of personnel detained.			
4. detainee.			
a. Transport a detainee to the initial detention facility.			
5. Segregate detainee.			

a. Segregate by perceived status.			
b. Segregate by perceived position of authority.			
6. Safeguard detainee.			
a. Provide medical aid.			
b. Provide food and water.			
c. Provide protective equipment.			
d. Protect detainees from threats.			
e. Protect detainees from inhumane treatment.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
MCRP 3-30.7	Commander's Tactical Handbook	223 and Appendix H
MCRP 4-11.8D	Detainee Operations	Chapter 2
MCRP 3-10A.2	Infantry Company Operations	13 through 23, Glossary 7, and Glossary 10

NOTES :

STUDENT OUTLINE

FRAGMENTATION GRENADES

MCT0301

06/28/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVE.

(1) Given an M67 fragmentation grenade and target, while wearing a fighting load, engage a target with an M67 fragmentation grenade to achieve impact within the effective casualty radius of the grenade. (0300-DEMO-1002)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify the nomenclature of the M67 fragmentation grenade in accordance with TC 3-23.30. (0300-DEMO-1002a)

(2) Given a list of choices, identify the characteristics of the M67 fragmentation grenade in accordance with TC 3-23.30. (0300-DEMO-1002b)

(3) Given a list of choices, identify the guidelines for M67 fragmentation grenade storage in accordance with TC 3-23.30. (0300-DEMO-1002c)

(4) Given a list of choices, identify the considerations for employment of hand grenades in accordance with TC 3-23.30. (0300-DEMO-1002d)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to provide you with the basic knowledge required to properly identify and employ the Fragmentation Grenade. To do this we will discuss the nomenclature of hand grenade, characteristics, inspection and carrying procedures, hand grenades grips, hand grenade employment, considerations of employment.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. NOMENCLATURE OF A GRENADE. (0300-DEMO-1002a)

a. **Body**. This part of the grenade functions as a container and may be made of metal, fiber, or plastic. The body also provides fragmentation in some grenades.

b. **Filler**. This part is the chemical or explosive substance contained in the body. The filler gives the grenade its explosive characteristic and determines its function.

c. **Fuse Assembly**. This part is the heart of the grenade. It causes the grenade to function by means of a chain reaction through pyrotechnic, mechanical, or electrical means. All fuzes in US hand grenades may be categorized as either detonating or igniting.

d. **Grenade Safeties**. The four safeties of a casualty producing grenade are safety clip(3), safety pin(1), confidence clip(2), and safety lever(4).

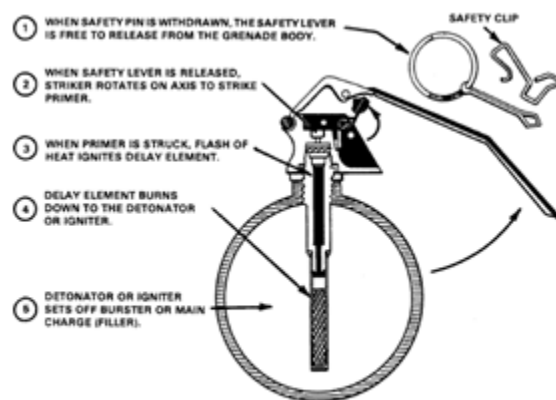


(1) Safety Clip. This is the first of four positive safeties found only on casualty producing hand grenades. It serves to hold the safety lever to the fuse assembly. The safety clip is the first safety to be removed.

(2) Confidence Clip. This is the second safety and designed to secure the pull ring to minimize accidental removal of the safety pin. The safety pin requires a rotation of the pull ring 90 degrees clockwise (if thrown right handed) before the safety pin can be removed from the fuse for employment.

(3) Safety Pin. This is the third safety on casualty producing grenades. It also functions to hold the safety lever on the fuse assembly. Once the safety pin is pulled the grenade is ready to be thrown.

(4) Safety Lever. This is the last safety device found on all grenades. Once the safety clip is removed and the safety pin is pulled, the safety lever must be held in place by the thrower. When the grenade is thrown, the striker located on top of the fuse assembly moves up, pushing the safety lever away from the grenade body and the striker detonates or ignites the primer.



2. CHARACTERISTICS. (0300-DEMO-1002b)

a. The hand grenade is a handheld, hand armed, hand thrown weapon. Hand grenades give the Marine the ability to kill the enemy, destroy enemy equipment, give signals, and control riots. It is the Marine's personal indirect fire weapon system.

b. Short Range. This depends entirely on the individual and the type of grenade being utilized.

c. Small Effective Casualty Radius. This is defined as the radius around the point of detonation in which a minimum of 50% of the personnel exposed become casualties.

d. Delay Element In The Fuse. All grenades have a delay element in their fuse permitting the user to find cover while employing the grenade. The time varies with the type of grenade being used.

e. Types Of Hand Grenades. There are six types of hand grenades. They are: Fragmentation, Offensive, Chemical,

Nonlethal, Illuminating, and Practice/Training. Each has different characteristics and each provides the Marine with a variety of capabilities.

(1) M69 Practice Hand Grenade. The M69 practice grenade is used for training. It can be used repeatedly by replacing the fuse assembly.

(a) Shape. The M69 practice grenade simulates the M67 fragmentation grenade and is hollow steel sphere shaped like a baseball.

(b) Color. Light blue with white markings.

(c) Characteristics. The M69 produces a loud pop with a small cloud of white smoke. It utilizes a M228 fuse with a 4 to 5.5 second time-delay. The M69 has an outlet at the base of the body that may cause serious injury when the detonating fuse explodes if used improperly. It weighs 14 ounces and the average Marine can throw this grenade 40 meters.

(2) M67 Fragmentation Grenades. The most common fragmentation grenade is the M67 Fragmentation Grenade. This is the primary casualty-producing grenade in the US military.

(a) Shape. The shape and size of the M67 resembles a baseball.

(b) Color. The color of the M67 is olive drab with a single yellow band around the top and yellow markings around the middle of the body.

(c) Characteristics. The killing radius is 5 meters and the effective casualty radius is 15 meters. It contains 6.5 ounces of composition B explosive and uses an M213 detonation fuse with a 4 to 5.5 seconds time delay. The M67 fragmentation grenade weighs 14 ounces. The average Marine can throw the M67 fragmentation grenade 35 meters.

(3) Offensive Hand Grenades (Concussion Grenades). Destroy above and below ground man-made structures. Kill or stun enemy divers during waterborne operations. Kill or incapacitate enemy personnel in the open, confined space, or during urban operations.

(a) Body. Cylinder shape made of pressed fiber and contains high explosive TNT.

(b) Color. Black with yellow markings around the middle.

(4) Stun Hand Grenades. Confuse, disorient, or momentarily distract a potential threat in forced entry scenarios, selected urban operations, or crowd control operations.

(a) Body. 5.25 inches in length and 1.73 inches at the corner of the hexagon location, steel hexagon tube with 18 blast and flash release holes along the sides with a heavy steel, hexagon-shaped top and bottom portion.

(b) Color. Olive drab with white markings, a pastel green band around the middle of the body, and a brown band on the tip end of the safety lever

(5) Incendiary Hand Grenades. Destroy equipment and weapon systems. Destroy munitions and start fires.

(a) Body. Sheet metal.

(b) Color. Gray with purple markings with a single purple band (pre MIL-STD 709D Ammunition Color Coding Standards). Light red with black markings (according to MIL-STD 709D).

(c) Effect. A portion of thermite mixture converts to molten iron, which burns at 4,330 degrees Fahrenheit. The mixture fuses together the metallic parts of any object that it contacts. The thermite filler can burn through a 1/8-inch steel plate. It produces its own oxygen and burns under water.

(6) Smoke Grenades. Ground smoke signals or smoke grenades are self-contained units used by ground Marines to signal aircraft or to convey information through a prearranged signal. Uses for ground smoke signals include: ground-to-ground or ground-to-air signaling device, convey information through a prearranged signal, or screening unit movements.

(a) Body. A cylinder of thin sheet metal 2.5 inches in diameter and 5.7 inches long with one hole at the bottom, which allows smoke to escape when the grenade is ignited.

(b) Color. Forest green body with light green markings. The color of the top indicates the color of the smoke.

3. INSPECTION & CARRYING PROCEDURES. (0300-DEMO-1002c)

a. Initial Inspections. Individual canisters house each grenade within the shipping container (Figure 2-14). Issue the hand grenades in their individual shipping canisters or unpacked and issue within the chain of command according to unit SOPs and local policies. Upon removing the sealed individual canisters from the shipping container, personnel should inspect the canisters and identify any of the following discrepancies:

(1) Damage to the canister.

(2) Missing or tampered seal on the canister. Personnel should open the canister. Once the canister has been opened but before removing the packing material (Figure 2-14), personnel should inspect the grenade and identify any of the following discrepancies:

(a) The hand grenade is upside down inside of the shipping canister.

(b) The safety pins are not properly attached or missing.



The sealed individual hand grenade canister should be:

- Undamaged (canister body),
- Unopened (shipping seal un-tampered with and present).



Inspect the contents of the sealed individual hand grenade canister for:

- Presence of packing material,
- Hand grenade in the upright position,
- Hand grenade safety pin is present and properly attached.

b. **Before Storing Inspection.** The following inspection procedures apply to all hand grenades within the United States inventory. Follow the procedures when handling grenades that are unpacked or stored in pouches.

- (1) Inspect unpacked grenades daily to ensure all safeties are present (safety clip, safety pin, confidence clip and safety lever).
- (2) Check the body for rust or dirt.
- (3) Make sure the lever is not broken or bent.
- (4) Check the grenade fuse for tightness. It must be tightly fitted within the grenade body.
- (5) Check for manufacture defects, i.e. visible holes in the body or the fuse.
- (6) Check fuse for rust or dirt.

c. **Hand Grenade Carrying In The Grenade Pouch.** Each Marine is issued two grenade pouches that should be properly woven into of their gear. One M67 fragmentation grenade or one M69 practice grenade may be carried in a pouch. The grenade pouches are specifically designed to securely carry these types of grenades. Grenade storage will be influence by unit SOP. A grenade is inserted into a pouch in the following manner:

(1) Unsnap the cover of the grenade pouch and place the grenade into the pouch. The safety lever will be secured on either side of the pouch with the safety lever in the elastic band.

(2) Once the grenade body is inside the pouch the pull ring will be in the downward position and the safety lever is secured completely inside the pouch.

(3) Pull the cover of the grenade pouch completely over the grenade and snap the pouch shut. No portion of the grenade is exposed outside of the pouch.

b. **Safety Considerations.** Do not put adhesive tape around fuse, pulling ring, safety lever and don't tape grenade to gear. Only place grenade in grenade pouch never carries by safety pull ring or safety lever. No unauthorized modifications will be done to hand grenades.

4. **HAND GRENADE GRIPS.** (0300-DEMO-1002d)

a. The importance of properly gripping the hand grenade cannot be overemphasized. A grenade not held properly may be difficult to arm. Gripping procedures differ slightly for right and left-handed throwers.

b. Safety and throwing efficiency is obtained when the grenade is held in the throwing hand with the safety lever placed between the first and second joints of the thumb. The throwing hand always forms a firm letter "C" around the body of the grenade with the thumb maintaining continuous contact between the safety lever and the grenade body.

c. For right-handed personnel, the grenade is held upright with the pull ring away from the palm of the throwing hand so that it is easily removed by the index finger or middle finger of the left hand.

d. For left-handed personnel, the grenade is inverted with the fingers and thumb of the throwing hand positioned in the same manner as by the right-handed person. Left-handed personnel must invert the grenade so that the pull ring may be safely removed by the index finger or middle finger of the right hand.

5. **HAND GRENADE EMPLOYMENT.** (0300-DEMO-1002d)

a. Because most individuals do not throw in the same manner, it is difficult to establish firm rules or techniques for throwing hand grenades. How accurately they are thrown is more important than how they are thrown. There is, however, a recommended method of throwing hand grenades.

b. Before throwing the hand grenade, you must quickly observe your target (turkey peek) to mentally establish the distance between your throwing position and the target area.

c. Grip the hand grenade in your throwing hand and remove the safety clip.

d. Remove safety clip with the thumb of the non-throwing hand by sweeping the clip away from the grenade.

e. Grasp the pull ring with your index or middle finger and twist clockwise (for a right handed thrower); this will remove the safety pin from the confidence clip. Next, pull the safety pin from the grenade pulling and twisting at the same time.

f. Quickly look at your target and throw the grenade using the overhand method so that the grenade arcs, landing on or near the target. Yell "frag out" to notify friendly personnel to seek cover.

g. Follow through by allowing the motion of your throwing arm to continue naturally once you release the grenade.

h. Take cover.

i. There are five different positions for throwing hand grenades: The standing, prone to standing, kneeling, prone to kneeling, and alternate prone. No matter the position, throwing fundamentals remain the same.

j. **Standing Position.** The standing position is the most desirable and natural position from which to throw grenades. It

allows the Marine to obtain the greatest possible throwing distance. However, this position should only be used when cover and concealment is readily available

(1) Observe the target to estimate the distance between the throwing position and the target area.

(2) Assume a natural stance, with your weight balanced equally on both feet.

(3) Hold the grenade at chest level (WORKING AREA).

(4) Prepare the grenade.

(5) Hold the grenade 4 to 6 inches behind the throwing ear, non-throwing side towards the enemy with non-throwing hand at a 45-degree angle; the fingers and thumb extended and joined, pointing toward the intended target.

(6) Throw the grenade overhand so that the grenade arcs, landing on or near the target.

(7) Allow the motion of the throwing arm to continue naturally after release of the grenade.

(8) Seek cover to avoid fragments or direct enemy fire. If no cover is available, drop to the prone position facing the direction of the grenade's detonation.

k. **Prone To Standing.** Use the prone-to-standing position to immediately suppress an area, when exposure time is more important than accuracy, and when cover and concealment is not readily available.

(1) Lie down on the stomach with the body parallel to the grenade's intended line of flight. Place weapon one arm's length away on your throwing side, muzzle pointing down range with the port ejection cover facing upward.

(2) Observe target area.

(3) Hold the grenade at chest level (WORKING AREA).

(4) Prepare the grenade.

(5) Place the hands (knuckles down with elbows skyward) in a modified push-up position, while maintaining a firm grip on the grenade.

(6) Stand up while holding the grenade in the throwing hand. Assume a good standing position, if the situation permits.

(7) Hold the grenade 4 to 6 inches behind the throwing ear, non-throwing side towards the enemy with non-throwing hand at a 45-degree angle; the fingers and thumb extended and joined, pointing toward the intended target.

(8) Throw the grenade overhand so that the grenade arcs, landing on or near the target.

(9) Allow the motion of the throwing arm to continue naturally after release of the grenade.

(10) After throwing the grenade, drop to the ground on the stomach and press flat against the ground.

k. **Kneeling Position.** The kneeling position reduces the distance a Soldier can throw a grenade. Used primarily from behind low-level ground cover.

(1) Observe the target mentally estimating the throwing distance.

(2) Hold the grenade at chest level (WORKING AREA).

(3) Prepare the grenade while behind cover.

(4) Bend the non-throwing knee at a 90-degree angle, placing that knee on the ground. Keep the throwing leg straight and locked, with the side of the boot firmly on the ground.

(5) Move the body to face sideways, toward the target position.

(6) Hold the grenade 4 to 6 inches behind the throwing ear, non-throwing side towards the enemy with non-throwing hand at a 45-degree angle; the fingers and thumb extended and joined, pointing toward the intended target.

(7) Throw the grenade overhand so that the grenade arcs, landing on or near the target. Push off with the throwing foot to give added force to the throw.

(8) Allow the motion of the throwing arm to continue naturally after release of the grenade.

(9) Drop to the prone position or behind available cover to reduce exposure to fragmentation and direct enemy fire.

1. **Prone To Kneeling.** The prone-to-kneeling position enables the Marine to throw the grenade farther and used for the same reasons as the prone-to-standing position; time to throw is more important than accuracy.

(1) Lie down on the stomach, with the body parallel to the grenade's intended line of flight. Place weapon one arm's length away on your throwing side, muzzle pointing down range with the port ejection cover facing upward.

(2) Observe target area.

(3) Hold the grenade at chest level (WORKING AREA).

(4) Prepare the grenade.

(5) Place the hands (knuckles down with elbows skyward) in a modified push-up position. Cock your non-throwing knee while maintaining a firm grip on the grenade. Rotate up onto your non-throwing knee, bringing your throwing leg behind you (DO NOT lock your knee) with the side of the boot firmly on the ground to stabilize your throwing position while holding the grenade in the throwing hand. Assume a good kneeling position, if the situation permits.

(6) Hold the grenade 4 to 6 inches behind the throwing ear, non-throwing side towards the enemy with the non-throwing hand at a 45-degree angle; the fingers and thumb extended and joined, pointing toward the intended target.

(7) Rock back on your throwing leg and use the momentum to throw the grenade overhand so that the grenade arcs, landing on or near the target.

(8) Allow the motion of the throwing arm to continue naturally after release of the grenade.

(9) After throwing the grenade, drop to the ground on the stomach and lay flat against the ground.

m. **Alternate Prone.** The alternate prone position reduces both distance and accuracy. This position is used when cover is limited and rising to engage a target would expose the Marines to direct fire.

(1) Lie down on the back, with the body perpendicular to the grenade's intended line of flight. Place weapon on the non-throwing side with the port ejection cover facing skyward.

(2) Observe target area.

(3) Hold the grenade at chest level (WORKING AREA).

(4) Prepare the grenade.

(5) Cock the throwing leg at a 45-degree angle, maintaining knee-to-knee contact and bracing the side of the boot firmly on the ground.

(6) Hold the grenade 4 to 6 inches behind the ear with the arm cocked for throwing.

(7) With the free hand, grasp any object that provides additional leverage to increase the throwing distance.

(8) Throw the grenade, and push off with the rearward foot to give added force to the throw.

(9) After throwing the grenade, roll over onto the stomach and press flat against the ground.

6. **CONSIDERATIONS OF EMPLOYMENT.** (0300-DEMO-1002d)

a. Marines employ hand grenades and pyrotechnics throughout the spectrum of warfare to conceal positions and to inflict greater casualties.

b. Defensive Operations. The fragmentation grenade is the primary hand grenade used in defensive operations. It can be used with other weapons to destroy remnants of an attacking enemy force that may succeed in penetrating the more distant barriers and final protective fires. The fragmentation hand grenade further disrupts the continuity of the enemy attack, demoralizes the enemy soldier, and forces the enemy into areas covered by direct-fire weapons such as rifle and machine gun fire and Claymore munitions. Using fragmentation hand grenades on dismounted enemy forces at a critical moment in the assault

can be the final blow in taking the initiative away from the enemy.

(1) The following rules apply when employing fragmentation hand grenades from fighting positions:

(a) Clear overhead obstructions that may interfere with the path of the thrown grenade. Do this at the same time direct-fire fields of fire are cleared.

(b) Rehearse grenade employment; know where the primary target is located.

(c) Keep 50 percent of the fragmentation grenades at the ready in the fighting position, leaving the remaining fragmentation grenades on the load bearing equipment.

(d) Rehearse actions needed if an enemy grenade lands in the fighting position.

(e) Employ fragmentation hand grenades against enemy located in defilade positions as first priority. This lessens the danger to friendly Marines and helps cover terrain not covered by direct fire weapons.

(f) Reconnoiter the alternate and supplementary positions, and determine the priority for the fragmentation hand grenade target.

c. Retrograde Operations. Most of the employment considerations applicable to the use of hand grenades and pyrotechnics in the defense are equally applicable to retrograde operations. Considerations unique to retrograde operations relate to creating obstacles, marking friendly force locations, breaking contact, and communicating.

d. Urban Operations. By definition, urban areas house large quantities of people and contain large numbers of buildings. The enemy may be intermingled with noncombatants, and collateral damage must be limited. Because of these factors, the ROE may be more restrictive than under other combat conditions. Types of grenades are employed during urban operations:

(1) Nonlethal grenades.

(2) Fragmentation.

- (3) Chemical grenades.
- (4) Offensive.
- (5) Ground smoke signal.

e. Offensive Operations. The fragmentation hand grenade is the primary type of grenade used during offensive operations; however, offensive operations can also involve the use of offensive and stun hand grenades. These operations include clearing:

- (1) Confined spaces.
- (2) Trenches.
- (3) Bunkers.
- (4) Rooms.
- (5) Entrenched positions.

PERFORMANCE EXAMINATION CHECKLIST

0300-DEMO-1002

Student Instructions:

1. You are a Marine and must engage a target with an M67 fragmentation grenade.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and achieve impact within the effective casualty radius of the grenade.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Inspect grenade for defects.			
a. Inspect the grenade for missing or improperly attached safety pins.			
b. Inspect for rust on the grenade body.			
c. Inspect for rust on the grenade fuse.			
d. Inspect for holes visible on the grenade body.			

e. Inspect for holes on the grenade fuse.			
f. Inspect the grenade fuse assembly for tightness.			
g. Inspect the safety clip for damage.			
h. Inspect safety pin for damage.			
i. Inspect the confidence clip for damage.			
j. Inspect the safety lever for damage.			
2. Store grenade for transport.			
a. Carry hand grenades in designed grenade pouches.			
b. Ensure that the grenade is fully inside of the carrying pouch.			
c. Ensure that the grenade is correctly inside of the carrying pouch.			
d. Ensure the grenade pouch pocket flap is fully secured.			
3. Remove grenade from pouch.			
a. Perform grenade handling procedures.			
b. Re-inspect grenade to ensure all safety devices are present.			
c. Correctly grip the grenade (left/right hand).			
4. Estimate range to target.			
a. Identify and use available cover.			
b. Identify target.			
c. Minimize exposure time to the enemy.			
5. Prepare the grenade for throwing.			
a. Remove safety clip.			
b. Remove pull ring from confidence clip, as required.			
c. Remove safety pin.			
6. Assume a grenade throwing position.			
7. Throw the grenade while communicating "Frag Out."			
8. Take cover and protect vital organs.			
a. Remain covered until effects are heard.			
9. Assess the effects of the hand grenade.			

a. Employ hand grenades to supplement small arms fire in the offense, as required.			
b. Employ hand grenades to supplement small arms fire in the defense, as required.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGES</u>
TC 3-23.30	Grenades and Pyrotechnic Signals	Chapter 1 through Chapter 5

NOTES :

STUDENT OUTLINE

M240B MEDIUM MACHINEGUN

MCT0302

06/28/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given an SL-3 complete M240B medium machinegun, tripod, vehicle mount components, authorized cleaning gear, and lubricants, perform operator maintenance for an M240B medium machinegun and associated components to ensure the weapon and components are operational. (0331-MMG-1001)

(2) Given a mounted medium machinegun, ammunition, and a target(s), while wearing a fighting load, engage targets with a medium machinegun to suppress, neutralize, or destroy the target(s). (MCCS-MMG-1001)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify the characteristics for an M240B medium machinegun in accordance with TM 08670A/09712A-10/1B. (0331-MMG-1001a)

(2) Given a list of choices and a diagram, identify the nomenclature for an SL-3 complete M240B medium machinegun in accordance with TM 08670A/09712A-10/1B. (0331-MMG-1001b)

(3) Given a list of choices, identify the nomenclature of an MK125 tripod in accordance with TM 06510C-12/1. (0331-MMG-1001c)

(4) Given a list of choices, identify cleaning material used to maintain a SL-3 complete M240B medium machinegun in accordance with TM 08670A/09712A-10/1B. (0331-MMG-1001d)

(5) Given a list of choices, identify limits of authorized weapons maintenance for the M240B medium machinegun in accordance with MCTP 3-01C. (0331-MMG-1001e)

(6) Given a list of choices, identify the weapons conditions of the medium machinegun in accordance with MARADMIN 173/01. (0331-MMG-1001f)

(7) Given a list of choices, identify the types of ammunition for the M240B medium machinegun in accordance with MCTP 3-01C. (MCCS-MMG-1001a)

(8) Given a list of choices, identify ammunition safe handling procedures for M240B medium machinegun in accordance with MCTP 3-01C. (MCCS-MMG-1001b)

(9) Given a list of choices, identify the characteristics of the Machinegun Day Optic (MDO) in accordance with TM 11792A-OI. (MCCS-MMG-1001c)

(10) Given a list of choices and a diagram, identify the nomenclature of the Machinegun Day Optic (MDO) in accordance with TM 11792A-OI. (MCCS-MMG-1001d)

(11) Given a list of choices, identify machinegun rates of fire in accordance with MCTP 3-01C. (MCCS-MMG-1001e)

(12) Given a list of choices, identify the cycle of functioning for the M240B medium machinegun in accordance with MCTP 3-01C. (MCCS-MMG-1001f)

(13) Give a list of choices, identify the types of stoppages for the M240B medium machinegun in accordance with MCTP 3-01C. (MCCS-MMG-1001g)

(14) Give a list of choices, identify the types of malfunctions for the M240B medium machinegun in accordance with MCTP 3-01C. (MCCS-MMG-1001h)

(15) Given a scenario of a medium machinegun with a stuck and ruptured cartridge, verbally state the actions to remove a ruptured and stuck cartridge to return the weapon into action. (MCCS-MMG-1001i)

(16) Given a list of choices, identify the classification of a hot gun for the M240B medium machinegun in accordance with TM 08670A/09712A-10/1B. (MCCS-MMG-1001j)

(17) Given a list of choices, identify the principles of machinegun employment in accordance with MCTP 3-01C. (MCCS-MMG-1001k)

(18) Given a list of choices, identify the methods of machinegun target engagement in accordance with MCTP 3-01C. (MCCS-MMG-10011)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to familiarize you with operation and maintenance of the M240B. I will do this by covering: Characteristics for an M240B, Characteristics of an MK125 tripod, Nomenclature for an M240B, Nomenclature for an MK125 tripod, Authorized Weapon Maintenance, Cleaning and Lubricating Materials, Function Check, SL3 Components, Cycle of functioning, Weapons Conditions, Ammunition for the M240B, Ammunition Safe Handling Procedures, Stoppages, Malfunctions, Classification of a Hot Gun, Initial Fire Commands, Principles of Machine Gun Employment, Target Engagement, MDO characteristics, MDO Nomenclature, MDO Utilization. This lesson directly relates to all operations involving Medium Machine Guns (MMG).

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. CHARACTERISTICS FOR AN M240B. (0331-MMG-1001a)

a. **General Characteristics.** The M240B is an air-cooled, belt-fed, gas-operated, crew served, fully automatic weapon that fires from the open-bolt position. It is able to provide a heavy, controlled volume of accurate, long-range fire that is beyond the capabilities of individual small arms. The weapon fires from the open-bolt position and is fed by a disintegrating belt of metal links. The gas from firing one round provides the energy for firing the next. Thus, the gun functions automatically as long as it is supplied with ammunition and the trigger is held to the rear. It can be fired utilizing either the attached bipod mount or by mounting the M240B on the tripod. The tripod provides the most stable base for the weapon, enabling the gunner to maximize its range capabilities and deliver a high degree of accurate fire on target.

(1) Operational Data.

(a) Ranges (with tripod).

1. Maximum3,725 meters.

2. Maximum effective area1,800 meters.

3. Maximum effective point.....800 meters

(b) Rates Of Fire. Rate of fire is the frequency at which a specific weapon can fire or launch its projectiles. It is usually measured in rounds per minute.

1. Sustained: 100 RDS/M, 6-8 round burst (4-5 seconds between burst) - Change barrel every 10 minutes.

2. Rapid: 200 RDS/M, 10-12 round burst (2-3 seconds between burst) - Change barrel every 2 minutes.

3. Cyclic: 550 to 650 RDS/M continuous burst - change barrel every 1 minute.

2. CHARACTERISTICS OF AN MK125 TRIPOD. (0331-MMG-1001c)

a. MK125 Tripod. The MK125 tripod mount consists of the tripod assembly, T&E mechanism and pintle assembly. The tripod assembly provides a stable and relatively lightweight base that is far superior to the bipod. The tripod may be extended and collapsed easily.

(1) Engraved on the traversing bar is a scale that measures direction in mils. It is graduated in 5-mil increments. It is numbered every 100 mils from 0 in the center to 450 mils (26 degrees) on the left side and 425 mils (24 degrees) on the right side. The limit of traverse for the MK125 Tripod is 875 mils.

(2) 1 MIL, short for Milliradian, is a unit of angular measurement similar to degrees of a compass. 17.78 MILs is equal to 1 Degree, so therefore it is more accurate. At a distance of 1,000 meters 1 MIL deviation is equal to 1 meter, verses 17.78 meters that 1 Degree will result in.

(3) The MK125 tripod should be cleaned to remove all dirt, then a light coat of CLP should be applied, especially to the sleeve and sleeve latch.

b. Traversing And Elevating Mechanism. The purpose of the T&E mechanism is to provide controlled manipulation and the ability to engage predetermined targets.

(1) The traversing portion of the mechanism consists of the traversing hand wheel, traversing screw, offset head, and traversing slide with lock lever.

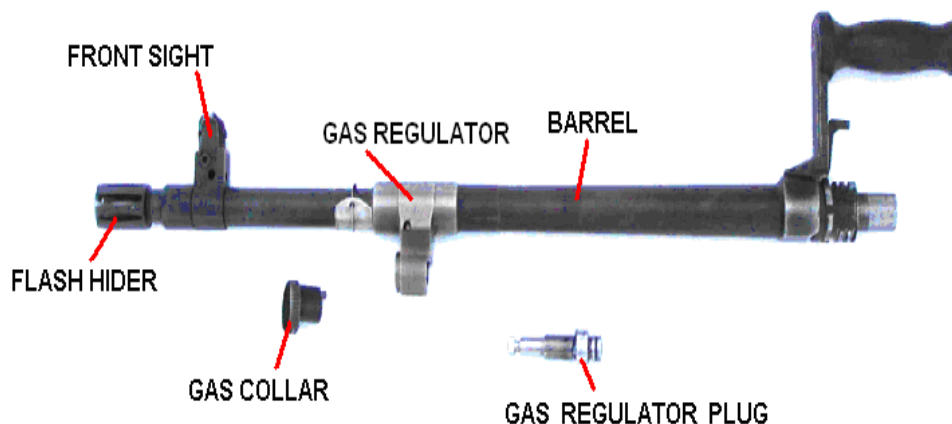
(2) The traversing screw has 100 mils of traverse. One click on the traversing handwheel indicates a 1 mil change in direction of the barrel.

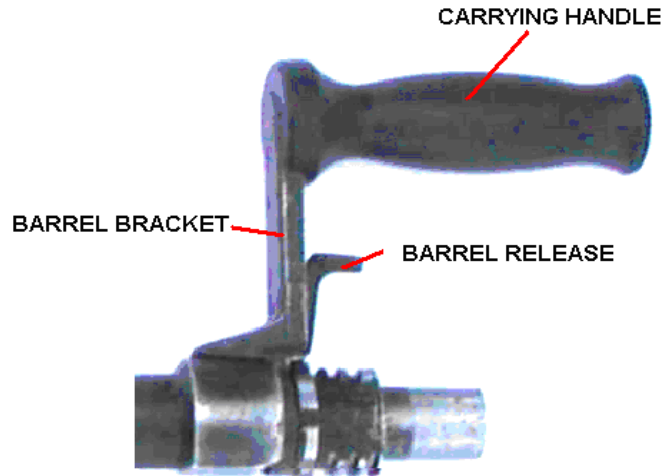
(3) The elevating hand wheel also has a scale. It is marked in 1 mil increments from 0 to 50. One click on the elevating handwheel indicates a 1 mil change in elevation of the barrel.

3. NOMENCLATURE FOR AN M240B. (0331-MMG-1001b)

The M240B has eight major components. They are the barrel assembly, buttstock and buffer assembly, driving spring rod assembly, bolt and operating rod assembly, trigger housing assembly, cover assembly, feed tray, and receiver assembly.

a. Barrel Assembly. Houses cartridge for firing and directs projectile.



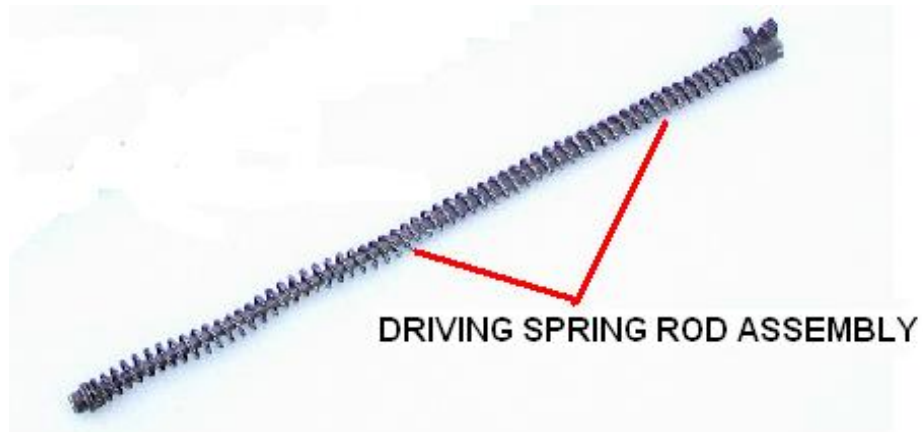


b. **Buttstock Assembly**. Absorbs recoil for bolt and operating rod assembly at the end of recoil movement.

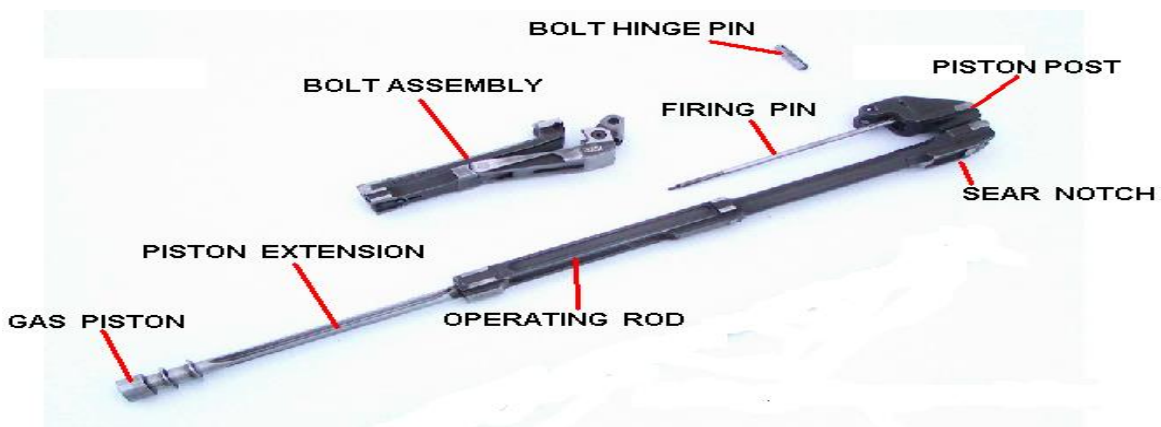
c. **Modified Buttstock**. A recent modification to the buttstock is shown in this picture. This modification includes a telescoping buttstock with interchangeable cheek rests. It was made to improve the functionality of the weapon.

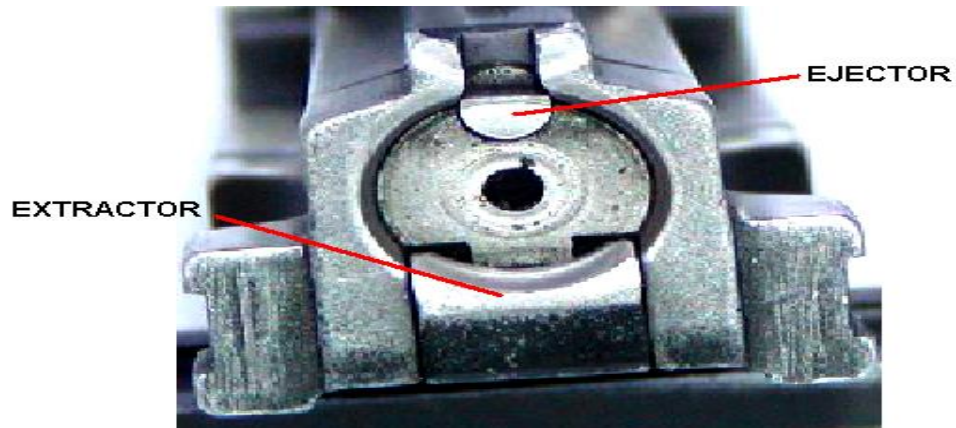


d. **Driving Spring Rod Assembly.** Provides energy for returning bolt and operating rod assembly to firing position.



e. **Bolt And Operating Rod Assembly.** Provides feeding, chambering, firing, extraction, and ejection of cartridges using the projectile propelling gases for power.

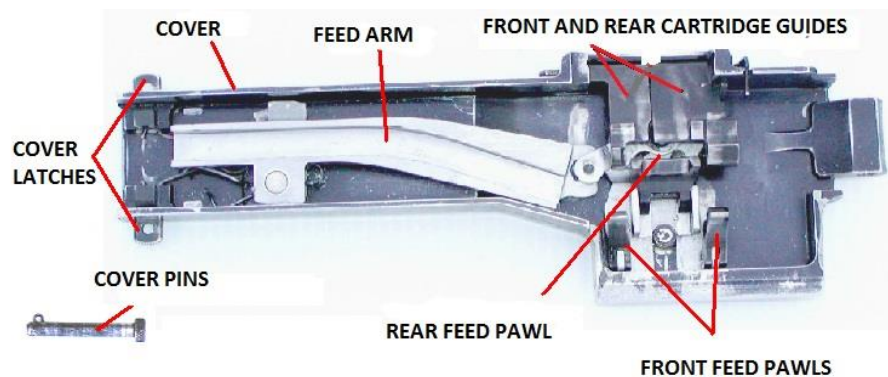




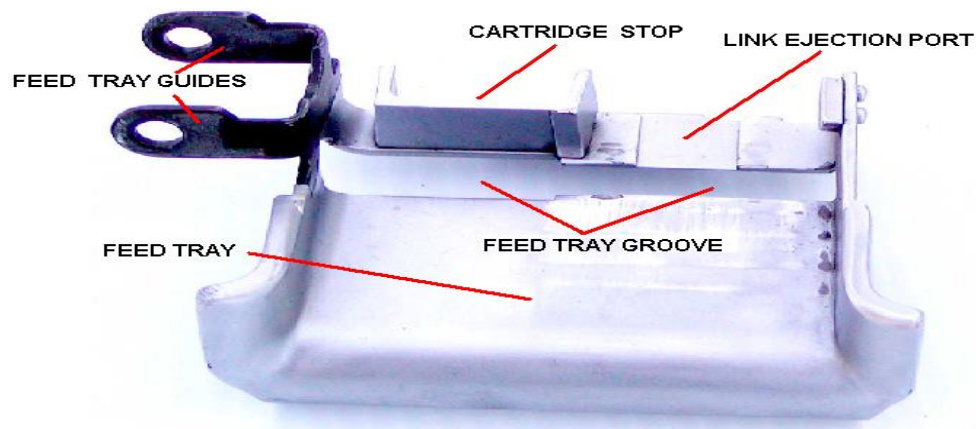
f. **Trigger Housing Assembly.** Controls the firing of the machine gun.



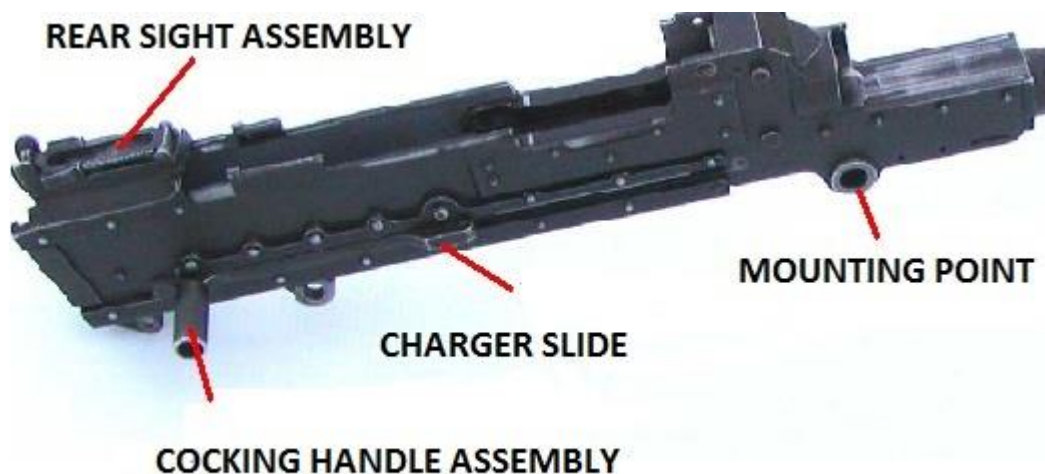
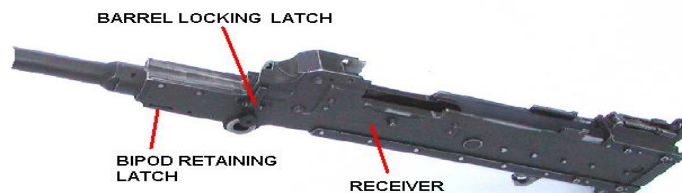
g. **Cover Assembly.** Feeds linked belt, positions and holds cartridges in position for stripping, feeding and chambering. Cover has integral sight mounting rail for current/future accessories.



h. **Feed Tray**. Serves as a guide for positioning cartridges to assist in chambering.



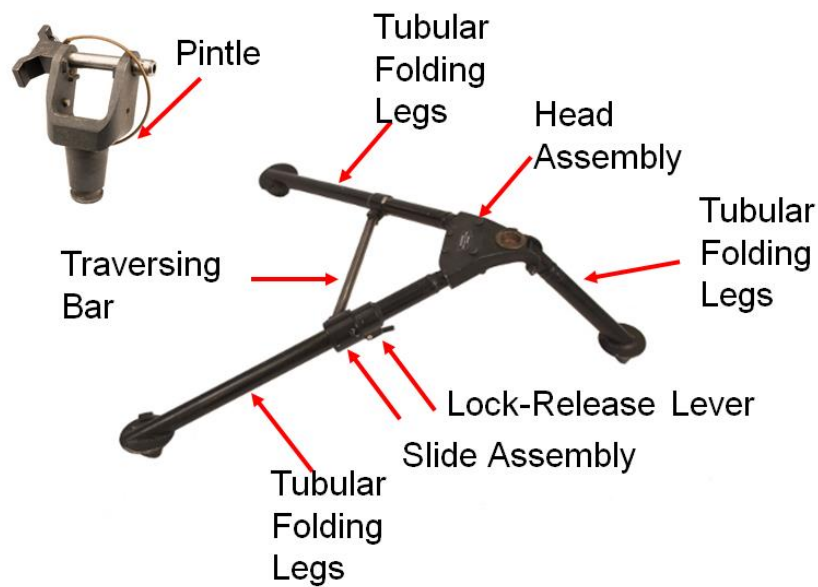
i. **Receiver Assembly**. Serves as a support of all major components. The receiver houses action of weapon, and controls functioning of weapon through a series of cam ways. Receiver has a forward integral mounting rail for current/future accessories.



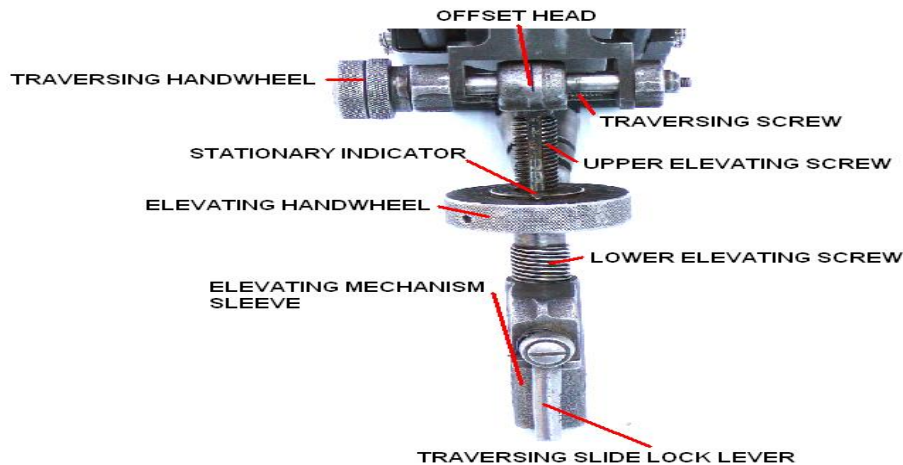
j. **Present Modifications To The M240B.** In the previous slide, we saw the new collapsible buttstock. There is also a new adjustable bipod that collectively enhances the functionality of the weapon.



4. **MK125 TRIPOD NOMENCLATURE.** (0331-MMG-1001c)



a. **Traverse And Elevation Mechanism.**



5. **AUTHORIZED WEAPON MAINTENANCE.** (0331-MMG-1001e)

a. Disassembly and assembly are divided into two categories—general and detailed.

(1) General Disassembly. Involves separating the weapon into main groups, which is also known as field stripping. This is a practice that stems from past experience in combat situations. It allows the operator to quickly break the weapon down into a set of major components that can be hastily cleaned to keep the weapon ready for action.

(a) General disassembly (field stripping) is the separation of the M240B into five main groups. They are the barrel group, buttstock group, operating group, trigger housing group, and the receiver.

(2) Detailed Disassembly. For the operator, involves the removal of some of the component parts and assemblies from the main groups. When the conditions permit, the operator can then take the time to more fully disassemble and thoroughly clean the weapon.

(a) Detailed disassembly and assembly involves removing and replacing component parts of some of the main groups. Although further disassembly of the operating, barrel, and receiver groups is authorized at the unit level, it should be kept to a minimum to reduce the possibility of damaging or losing parts. The buttstock and trigger housing groups will not have a detailed disassembly performed by the operator.

(b) Here at MCT only the barrel group is allowed for detailed disassembly.

6. **CLEANING AND LUBRICATING MATERIALS.** (0331-MMG-1001d)

a. **Authorized Cleaning Materials.** The only authorized cleaning materials for use at the unit level are CLP, RBC, dry cleaning solvent, and hot soapy water (for nonmetallic parts only). Use CLP or bore cleaner for daily maintenance and to remove minor carbon buildup after firing. Dry cleaning solvent will dry out the metal and it is recommended for cleaning during change from one lubricant to another.

b. **Authorized Lubricants.** The lubricants authorized for field use on the M240B are CLP, LSA, LSA-T, and LAW. They are used to lubricate certain operating parts before, during, and after firing. Each type is best used in specific climatic and environmental conditions. Do not mix lubricants on the same weapon. The weapon must be thoroughly cleaned during change from one lubricant to another.

(1) Under all but the coldest arctic conditions, LSA, CLP, or LSA-T are the lubricants to use on the weapon.

(2) Between 10 degrees F (-12 degrees C) and -10 degrees F (-23 degrees C) use CLP, LSA, LSA-T, or LAW.

(3) Below -10 degrees F (-23 degrees C) use only LAW.

c. **Climatic Considerations.** Under unusual conditions, clean and lubricate the machinegun more often.

(1) Hot, Dusty, And Sandy Areas. Clean often. Wipe oil from exposed surfaces with clean wiping rag. Cover weapon as much as possible to keep dust and sand out of parts.

(2) Hot, Wet Climate. Inspect often. Dry, clean and lubricate lightly as necessary.

(3) Extreme Cold Climate. Keep free of moisture. Lightly oil with LAW.

(4) After Exposure To Water. Disassemble, clean, oil and reassemble as soon as possible. Make sure the weapon is dry.

d. **Clean The M240B.**

(1) Before Firing.

(a) Inspect for cleanliness, proper mechanical condition, and missing or broken parts) Remove excess oil from the bore, chamber, barrel socket, and face of the bolt. Lubricate the gun by placing a light coat of CLP on the following parts:

(b) Operating Rod. Apply CLP on those recesses along the side that make contact with the receiver rails.

(c) Bolt. A very small amount of CLP should be placed on the spring pin, the roller, and other moving parts.

(d) Receiver. With the bolt to the rear, apply a line of CLP on either side of the bolt. Manually pull the bolt back and forth, so that CLP is spread over the bolt and receiver rails. Headspace should also be checked before firing. To do this, rotate the barrel changing handle and count the number of clicks heard) There must be a minimum of two clicks, but not more than seven. If this is not the case, the weapon should not be fired. It should be turned in for higher echelon maintenance/inspection.

(2) During Firing.

(a) During firing, maintain a light coat of CLP on the operating rod, bolt, and receiver) Ensure that the gas system's connections remain tight. Change barrels when necessary.

(3) After Firing.

(a) After firing, clean the gun with CLP, RBC, or dry-cleaning solvent. Even the most careful initial cleaning will not remove all carbon deposits; therefore, it is necessary to clean the gun for 3 consecutive days after firing.

(b) After cleaning each day, wipe off all cleaning materials and place a light coat of CLP on all metal parts. If the gun is fired daily, remember that repeated detailed disassembly will cause unnecessary wear)

(c) Adequate cleaning can be performed on a gun that has been disassembled into its five main groups. It is essential to perform detailed disassembly only after prolonged firing. Ensure that cleaning materials such as CLP and RBC are not used on the nonmetallic portions of the gun, such as the buttstock.

(d) Hot water, rags, and nonabrasive brushes can be used to remove dirt from the nonmetallic portions of the gun.

e. **MK125 Tripod Maintenance Procedures.**

(1) Check the pintle to see that it is attached properly, that the tripod is extended fully, and that the T&E mechanism is not positioned backwards.

(2) Examine the T&E mechanism. Determine if the scales can be read without difficulty. Manipulate the T&E hand wheel to examine the cleanliness of the far ends of the T&E screws. At the same time, perform a function check by testing for dead clicks.

(3) Dead clicks are present when, while turning either hand wheel, the barrel does not move. It means the gears inside the T&E are excessively worn, and the T&E should be replaced. Also, grasp the stock, and gently pull the gun back and forth to test for inordinate play in the MK125 mount. Determine if the slide lock lever firmly holds the T&E to the traversing bar.

(4) Examine the tripod and flex-mount for rust. One particular spot to check is inside the shoes of the tripod legs.

(5) Inspect the gun bag and spare barrel bag for signs of deterioration and wear. Ensure that the spare barrel bag contains all required SL-3 components, and examine the spare barrel as described above.

7. **FUNCTION CHECK.**

a. A function check must be performed after the weapon is disassembled and reassembled to ensure that it has been assembled correctly. A function check varies greatly from the M16A4 Service Rifle, and most weapons have their own unique function check. The procedure is as follows:

(1) Grasp the cocking handle with the right hand, palm up, and pull the bolt to the rear, locking it in place.

(2) While continuing to hold cocking handle, to ensure the bolt does not send home in the event the sear were to fail, use the left hand to move the safety to the "SAFE" position.

(3) Continuing to maintain control of the cocking handle, pull the trigger (the weapon should not fire.)

(4) Move the safety to the "FIRE" position.

(5) While continuing to maintain control of the cocking handle, use the left hand to pull the trigger and ease the bolt forward (ride it home) to prevent it from slamming into the chamber and damaging the face of the bolt.

8. **SL3 COMPONENTS.** (0331-MMG-1001b)

a. **Cleaning Rods.** Cleaning rods allow the operator to clean the bore, chamber, and gas cylinder of the M240B. A set of five cleaning rods is sufficient to run the entire length of the bore. Various brushes and a swab holder are attached to the end of the last cleaning rod by screwing them into position.



b. **Cleaning Rod Handle.** The cleaning rod handle allows the operator to maintain a better grip on the connected cleaning rods.



c. **Swab Holder.** The swab holder connects to the end of a cleaning rod and is used to hold small arms cleaning patches. The patch is inserted through a slit in the middle of the swab holder, which is then ran through the bore to remove dirt, carbon, and excess CLP.



d. **Chamber Brush**. The chamber brush enables the operator to clean the chamber of the M240B.



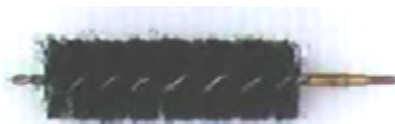
e. **Bore Brush**. The bore brush is attached to the end of a set of erected cleaning rods and ran through the bore of the barrel in order to remove dirt and carbon.



f. **Gas Cylinder Brush**. The gas cylinder brush is used to clean carbon out of the gas cylinder. It attaches to cleaning rods similarly to a bore brush.



g. **Receiver Brush**. The receiver brush allows the operator to clean hard to reach spots in the receiver.



h. **Combination Tool Scraper And Extractor**. The combination tool is used to clean the gas piston. Ordnance personnel use the combination tool to remove the ejector and extractor.



i. **Scraper**. The scraper tool is the primary tool used to clean the gas regulator plug and gas regulator.



j. **Reamer**. The reamer cleans the small holes in the gas regulator plug and the gas regulator.



k. **Ruptured Cartridge Extractor.** Used to remove ruptured cartridge.



l. **Combination Front Sight Adjusting Tool With 5/32 Hex Wrench.** Used to adjust windage and elevation of front sight.



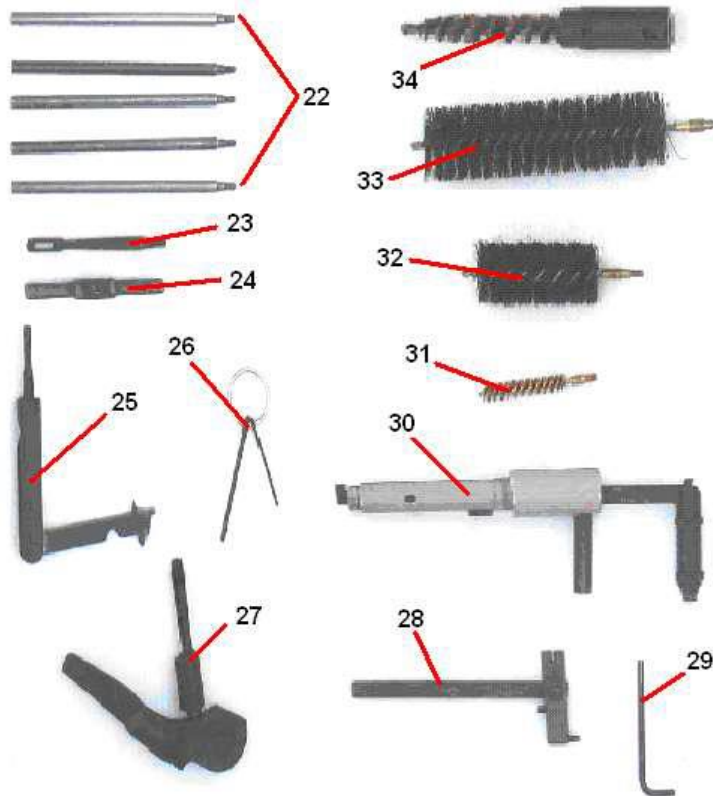


DIAGRAM #16

9. CYCLE OF FUNCTIONING. (MCCS-MMG-1001f)

a. The cycle starts when the first round of the belt is placed in the feed tray groove. Then the trigger is pulled, releasing the sear from the sear notch. When the trigger is pulled to the rear, the rear of the sear lowers and disengages from the sear notch.

(1) This allows the bolt and operating rod assembly to be driven forward by the expansion of the driving spring rod assembly. The cycle stops when the trigger is released and the sear again engages the sear notch on the bolt and operating rod assembly.

(2) There are eight steps to the cycle of functioning. The details of the cycle of functioning are as follows:

(a) Feeding. This step is completed when the round is positioned in the feed tray groove either by hand or by the action of the cover parts.

(b) Chambering.

1. This is accomplished when the bolt moves forward, strips the round from the link and pushes it forward into the chamber.

2. The round is forced down by the chambering ramp as the bolt travels forward.

3. As the round is fully chambered the extractor snaps over the base of the cartridge and the ejector is depressed.

(c) Locking. Takes place the same time as chambering.

1. The bolt enters the barrel socket by the swinging of the locking lever locking into the barrel socket.

2. The bolt and the barrel do not actually lock. That is why you can remove the barrel with the bolt forward.

3. The casing is ejected as soon as it is in line with the cartridge ejection port.

(d) Firing. After the bolt is locked, the operating rod moves freely carrying the firing pin through the firing pin aperture, striking the primer, and firing the round.

(e) Unlocking.

1. Unlocking is accomplished by the action of the gas, on the gas piston, which forces the operating rod to the rear.

2. The locking lever swings backwards unlocking the bolt.

(f) Extracting. The extractor grips the rim of the cartridge as the bolt and operating rod pull the case from the chamber.

(g) Ejecting. Ejecting is accomplished by the push of the ejector on the top of the casing.

(h) Cocking. This is the process of placing the parts of the gun in position to fire the next round.

1. Firing pin removed from the face of the bolt.

2. Bolt has moved far enough back to pick up the next round.

3. This completes one cycle of functioning of the machinegun. If the trigger is depressed again the cycle will begin again with feeding.

10. **WEAPONS CONDITIONS.** (0331-MMG-1001f)

a. **Condition 4:** Bolt forward, chamber empty, no rounds on feed tray, cover closed, weapon on fire.

b. **Condition 3:** Bolt forward, chamber empty, rounds on feed tray, cover closed, weapon on fire.

c. **Condition 2:** Does not apply to the M240B.

d. **Condition 1:** Bolt to rear, chamber empty, rounds on feed tray, first round in the feed tray groove, cover closed, weapon on safe.

11. **AMMUNITION FOR THE M240B.** (MCCS-MMG-1001a)

a. Ammunition is issued in a disintegrating metallic split linked belt. The members of machine gun teams must be able to recognize the types of ammunition and know how to care for them.

b. **Types Of Ammunition.**

(1) Ball Cartridge. Used against targets of light material, personnel, and during marksmanship training.

(2) Tracer Cartridge. Used for observation of fire, incendiary effect, signaling, and marking targets.

(3) Blank Cartridge. Used during training when simulated fire is desired.

(4) Dummy Cartridge. Used during training, such as gun a drill. It is completely inert, but simulates service ammunition for practice in loading the gun.

(5) Armor Piercing Cartridge. Used against light armored targets.

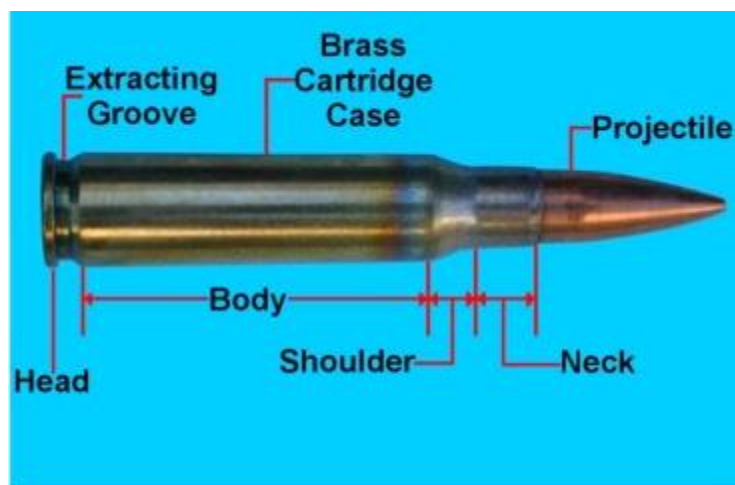
c. Ammunition Packaging. Ammunition is packaged in a metal box containing two bandoleers. Each box weighs approximately 16 pounds. Each bandoleer contains 100 linked rounds and weighs approximately 7 pounds. The bandoleer is made up of a cardboard carton held inside a cloth bag with a carrying strap. Ammunition in the bandoleers may be hooked together and fired from the metal containers, or the bandoleers may be removed for firing.

d. Identification. The type, caliber, model, and ammunition lot number, including the symbol of the manufacturer, are necessary for complete identification of small arms ammunition.

(1) The 7.62mm NATO cartridge is completely identifiable by its appearance; the painting of the bullet tip, the manufacturer's initial and year of manufacture on the base of the cartridge case, and the markings on the packing containers.

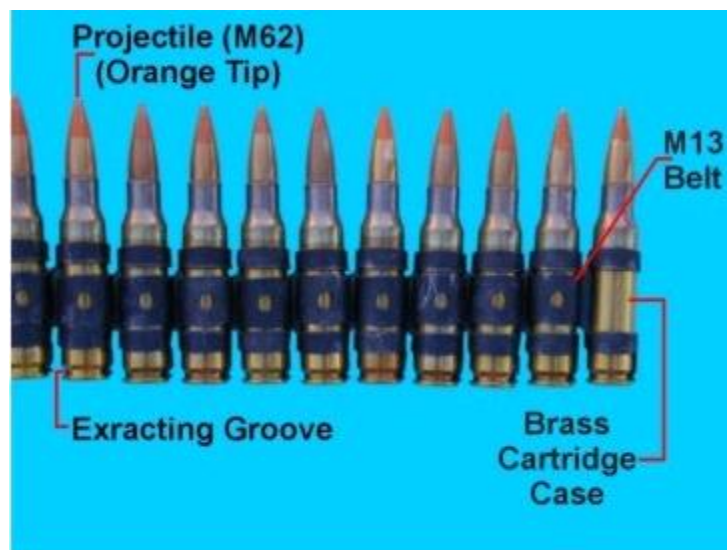
(2) When removed from their original packing containers, the cartridges may be identified by the following physical characteristics:

(3) Ball (M80). Plain bullet tip.

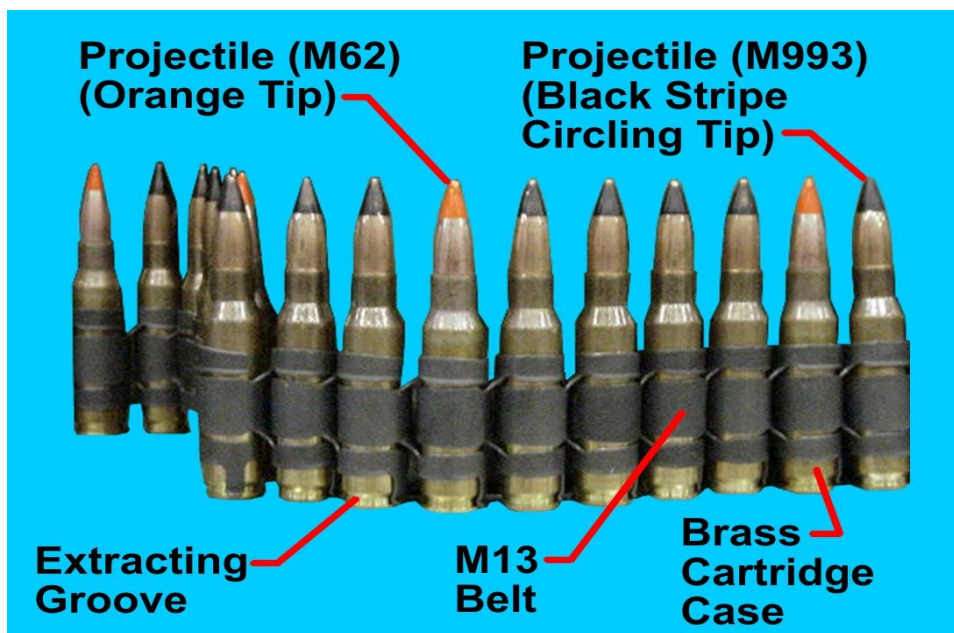


**Cartridge, 7.62mm Ball M80
(DODIC A131)**

(4) Tracer (M62). Tip of bullet is painted orange or red for overhead fire approve.



(5) Armor- Piercing (M61). Identified by a Black Tip.

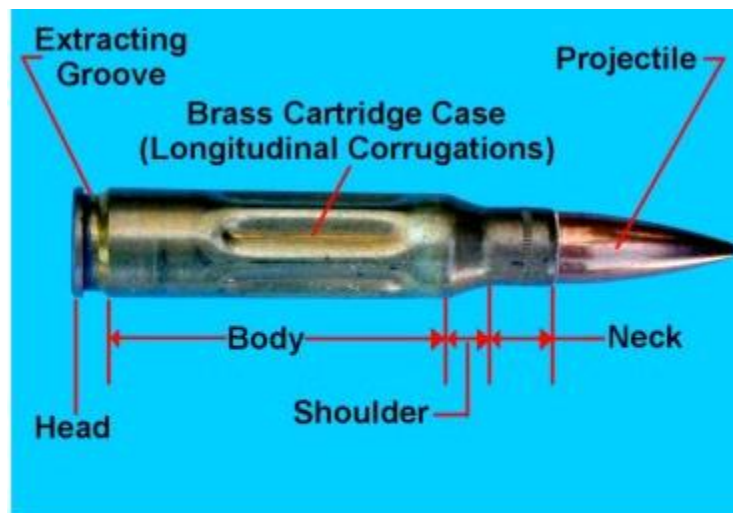


(6) Blank (M82). The case is shaped approximately to the configuration of the combat cartridge with no bullet. The propellant is held in the case by a wad, and on newer lots the mouth is sealed with purple lacquer and crimped for protection against air and moisture.



Cartridge, 7.62mm Blank M82 Linked
(DODIC A111)

(7) Dummy (M63A1). Six longitudinal corrugations (flutings) on the cartridge. Also, there is no primer or vent hole in the primer pocket.



Cartridge, 7.62mm Dummy M63
(DODIC A135)

12. **AMMUNITION SAFE HANDLING PROCEDURES.** (MCCS-MMG-1001b)

a. **Storage.** Store ammunition of all classes away from heat sources; such as open flame, radiators, heaters, and hot water

pipes. Ammunition should be stored under cover. If it is necessary to leave ammunition in the open, keep it at least 6 inches from the ground and covered with a double thickness of tarpaulin. Place the tarpaulin so it gives maximum protection and allows free circulation of air. Dig suitable trenches to prevent water from flowing under the ammunition pile.

b. **Care, Handling, And Preservation Of Ammunition.**

(1) Ammunition containers should not be opened until the ammunition is to be used. Ammunition removed from the airtight containers, particularly in damp climates, is likely to corrode. Protect ammunition from mud, dirt, and water. If the ammunition gets wet or dirty, wipe it off with a clean, dry rag prior to use. Wipe off light corrosion as soon as it is discovered.

(2) Heavily corroded cartridges should not be fired. They should be turned in, and the discrepancy reported.

(3) Use caution during firing to ensure that ammunition is kept out of the dirt. Dirt picked up during firing will act as an abrasive in the chamber and could cause a malfunction that can result in injury to personnel and/or damage to equipment.

(4) Do NOT expose ammunition to direct rays of the sun. If the powder is hot, excessive pressure may be developed when the gun is fired.

(5) Do NOT oil or grease ammunition. Dust and other abrasives will collect on it and could damage the operating parts of the gun.

(6) Do NOT fire dented cartridges, cartridges with loose projectiles, or other defective rounds.

(7) Do NOT fire ammunition (other than blank ammunition) until it has been positively identified by ammunition and grade.

13. **STOPPAGES.** (MCCS-MMG-1001g) (MCCS-MMG-1001i)

A stoppage is any interruption in the cycle of functioning caused by faulty action of the gun or defective ammunition; in short, the gun stops firing. Stoppages must be cleared quickly and firing resumed by applying immediate action. Immediate action is that action taken by the gunner/crew to reduce a stoppage, without investigating its cause, and quickly return the gun to action. Hang fire and cook off are two terms that

describe ammunition condition and should be understood in conjunction with immediate action procedures.

a. **Immediate Action.**

Immediate action is that action taken by the gunner/crew to reduce a stoppage, without investigating its cause, and quickly return the gun to action. Immediate action procedures for the M240B are as follows:

(1) Wait 5 seconds after the misfire to guard against a hang fire.

(2) Within the next 5 seconds (to guard against a cook off), pull the charging handle to the rear, observe the ejection port, and, if brass was seen ejecting, attempt to fire again.

(3) If brass did not eject, place the weapon on S, determine if the barrel is hot or cold.

(4) With a cold barrel, clear the weapon and inspect the chamber. If there is an obstruction follow remedial procedures. If there is no obstruction reload the weapon attempt to fire. If it fails to fire again, repeat this step one more time only and perform remedial action.

(5) Bolt cannot be pulled to the rear assume live round in the chamber and place the weapon on Safe. With a cold barrel clear, unload the weapon, and go into remedial procedures.

b. **Remedial Action.**

When immediate action fails to reduce the stoppage, remedial action must be taken. This involves investigating the cause of the stoppage and may involve some disassembly of the weapon and replacement of parts to correct the problem.

(1) Clear the weapon.

(2) Disassemble and visually inspect weapon.

(3) If no visible obstructions assemble, load and attempt to fire.

(4) If weapon does not fire, notify unit maintenance.

c. **Hang Fire.** A hang fire occurs when the cartridge primer detonates after being struck by the firing pin but some problem with the propellant powder causes it to burn too slowly and delays the firing of the projectile. Time (5 seconds) is allotted for this malfunction before investigating a stoppage further because injury to personnel and damage to equipment could occur if the round goes off with the cover of the weapon open.

d. **Cook Off.** A cook off occurs when the heat of the barrel is high enough to cause the propellant powder inside the round to ignite even though the primer is not struck. 10 seconds is needed to safeguard against this stoppage.

e. The same Immediate Action is applied for both stoppages, totaling 10 seconds.

f. When immediate action fails to reduce the stoppage, remedial action must be taken. This involves investigating the cause of the stoppage and may involve some disassembly of the weapon and replacement of parts to correct the problem. Two common causes of a stoppage that may require remedial action are failure to extract due to a stuck or ruptured cartridge.

(1) **Stuck Cartridge.** Some swelling of the cartridge occurs when it fires. If the swelling is excessive, the cartridge will be fixed tightly in the chamber. If the extractor spring has weakened and does not tightly grip the base of the cartridge, it may fail to extract the round when the bolt moves to the rear. Once the bolt is locked to the rear, the weapon is placed on S, and the barrel has been allowed to cool, a length of cleaning rod should be inserted into the muzzle to push the round out through the chamber.

(2) **Ruptured Cartridge.** Sometimes a cartridge is in a weakened condition after firing. In addition, it may swell as described above. In this case, a properly functioning extractor may sometimes tear the base of the cartridge off as the bolt moves to the rear, leaving the rest of the cartridge wedged inside the chamber. The ruptured cartridge extractor must be used in this instance to remove it. The barrel must be removed and the extractor inserted into the chamber where it can grip and remove the remains of the cartridge.

14. **MALFUNCTIONS.** (MCCS-MMG-1001h)

A malfunction is a failure of the gun to function satisfactorily; the gun will fire, but it fires improperly. Defective ammunition or improper operation of the gun by a crewmember is not considered a malfunction. Two of the more common malfunctions are sluggish operation and runaway gun.

a. **Sluggish Operation.** Instead of firing at its normal rate (approximately 9 to 10 rounds per second), a sluggish gun fires very slowly. It can be due to excessive friction or loss of gas. Excessive friction is usually due to lack of lubrication or excessive dirt/carbon in the gas system or on the bolt and receiver rails. Excessive loss of gas is usually due to loose connections in the gas system. To remedy continued sluggish operation, clean, lubricate, tighten, or replace parts as required.

b. **Runaway Gun.** This is when a gun continues to fire after the trigger is released; firing is uncontrolled. A runaway gun is usually caused by a worn, broken, or burred sear; the sear shoulder is unable to grab the operating rod and hold it to the rear. An excessively worn sear notch on the operating rod could also be responsible. Never reload a runaway weapon until it is repaired. Be sure weapon is cleared before removing it from vehicle/tripod mount. If runaway occurs (weapon won't stop firing), take any of the 3 actions below to stop the runaway, then notify unit maintenance.

(1) Let weapon fire if near end of link belt.

(2) Break link belt (grasp link belt and twist it firmly). Used for 50 rounds or more of ammunition.

(3) Grab cocking handle assembly, pull all the way back and hold. Place safety to "S" safe and remove ammunition belt.

15. **CLASSIFICATION OF A HOT GUN.** (MCCS-MMG-1001j)

a. More than 200 rounds fired within a 2-minute period.

b. A long continuous burst or repeated firing of the weapon even though you do not reach 200 rounds.

c. Less than 15 minutes have lapsed without a round being fired from a hot gun.

d. If the squad leader/vehicle commander for any reason determines the weapon is hot.

e. **Operation Under Usual Conditions.**

(1) If nothing is ejected and you have a hot gun, do **NOT** open the cover. Place safety to "S" safe, keep weapon pointed down range, and remain away from the weapon for 15 minutes. After 15 minutes, clear your weapon.

(2) The climate temperature in different regions will make a difference as to what constitutes a hot gun. A hot, sunny day can cause a cook-off within 50 rounds, with the weapon and ammunition in the sun.

16. **INITIAL FIRE COMMAND.** (MCCS-MMG-10011)

(a) The elements contained in the initial fire command are identical to those utilized for the infantry unit leader. The acronym **ADDRAC** can be utilized to remember the elements.

(1) **Alert.** (Only when not obvious) The alert is the first element of the initial fire command. Its purpose is to designate the gun crews and ready them to receive and execute the fire command. **FIRE MISSION** is announced for all targets. When both guns of a squad are to fire, the squad leader announces **FIRE MISSION**. If only one gun is to fire, then **NUMBER ONE, FIRE MISSION** or **NUMBER TWO, FIRE MISSION** is given. When the squad leader desires to alert both guns, but only wants one gun of the squad to fire, he announces **FIRE MISSION, NUMBER ONE** or **FIRE MISSION, NUMBER TWO**.

(2) **Direction.** When the target is not obvious, the gunners must be told to look in a particular direction to see it. Direction is given as **FRONT, RIGHT (LEFT) FRONT, RIGHT (LEFT) FLANK**, etc. An indistinct target may be indicated by the use of a reference point. The selected reference point must be an easily recognizable terrain feature or object which is in or near the target area. When a reference point is used, it is announced as **REFERENCE**. For clarity, the word **TARGET** always precedes the target description when a reference point is used. When the selected reference point is within the target area, the target may be indicated as extending so many mils, meters, or fingers from the reference point. When using this method, the words mils and meters are always implied for bipod-mounted guns.

(3) Description. (only when not obvious) A target description is a word or two used to inform the gunner of the nature of his target. The following words are examples of target descriptions: troops (any dismounted enemy personnel); machine gun (any automatic weapon); tank (any armored vehicle); if several targets are in view, the particular target, or part of a target, which is to be engaged may be described as leading truck, right building, far end, halted column, etc. If the target is obvious, no description is necessary.

(4) Range. This element follows the target description and is announced in meters. The words range and meters are not used. The range is announced in even digits, hundreds, or thousands. For example: FOUR FIVE ZERO, THREE HUNDRED, ONE HUNDRED, ONE THOUSAND.

(5) Assignment/Method. This element is utilized only when specific assignments are required to divide the target, assign class of fire, or to designate a rate of fire.

(6) Control. For immediate engagement of the target, the command FIRE or the arm-and-hand signal to fire is given without pause. It is often of great importance that machine gun fire be withheld for surprise and maximum effect, and that both guns of a pair open fire at the same time. To ensure this, the leader may preface the command or signal to commence firing with the words **AT MY COMMAND** or **ON MY SIGNAL**. When the gunners are ready to engage the target, they report **UP** to the team leaders who signal **READY** to the squad leader, or they may announce **NUMBER ONE (TWO) UP**. The squad leader then gives the command or signal to fire.

(7) Fire commands should be as brief and concise as possible; therefore, obvious information is omitted when possible. All initial fire commands must contain **ALERT**, **RANGE**, and **COMMAND**. The remaining elements may be omitted only if they are obvious.

17. PRINCIPLES OF MACHINE GUN EMPLOYMENT. (MCCS-MMG-1001k)

a. Maximum efficiency in the tactical employment of all types of machine guns can be reached by applying the following principles during planning. Most tactical situations would benefit from the employment of all eight principles simultaneously. However, in actuality, these principles are prioritized according to the tactical situation and some may be abandoned in favor of others that are more crucial. The acronym

for the eight principles of machinegun employment is known as, "PICMDEEP."

b. **Eight Principles Of Machinegun Employment.**

(1) Employed In Pairs. Preferred method of machinegun employment. Employing machine guns in pairs ensures a continuous, high volume of fire. It also gives the guns the capability of efficiently engaging targets of larger width or depth than one machine gun could effectively engage alone.

(2) Interlocking Fire. Ensuring that fire from one machine gun position interlocks with the fires of other machine gun positions prevents gaps through which the enemy can easily close with and attack friendly positions. Machine gun fire, properly augmented with obstacles and other weapons effects, should form a "wall of steel" between friendly positions and the enemy.

(3) Coordination Of Fire. Ensure machine gun fire is coordinated with the fires of other machine guns and other weapons. In the defensive, the machine gun forms the backbone around which other infantry weapons are organized.

(4) Mutual Support. No machine gun should be placed in isolation. Machine guns should be placed where they can cover each other by fire, fires of one machine gun can help defeat attacks on another machine gun.

(5) Positioned In Defilade. If at all possible, gun positions should be in defilade. As previously discussed, the enemy will quickly target gun positions, trying to neutralize or destroy them. Placing the machine guns in defilade provides them with some substantial cover between them and the enemy's direct fire weapons. This could be essential to their survival.

(6) Positioned To Produce Enfilade Fire. To achieve the greatest effect from the machine gun, position it so that the long axis of the beaten zone coincides with the long axis of the target. This type of fire, called enfilade fire, causes the maximum amount of rounds to be concentrated on the maximum amount of targets, significantly increasing the chances of hitting targets. Enfilade fire is normally associated with flanking fire.

(7) Economy. Machine guns fire at high rates making excessive ammunition consumption a concern. Wasteful use of

ammunition can severely jeopardize the success of an operation if resupply is slowed or halted by enemy action, weather, terrain, and/or other factors beyond friendly control. Therefore, a detailed, accurate mission analysis plans to use only those types and amounts of ammunition that will effectively cripple or destroy the enemy. Rates of fire are used when determining a mission analysis.

(8) Protection (Cover and Concealment). Well-planned and well-prepared alternate and supplementary positions that provide cover and concealment for machine guns are essential. Employ machine guns from a covered and concealed position and do not open fire until necessary.

18. **TARGET ENGAGEMENT.** (MCCS-MMG-10011)

There are three types of targets that will be engaged: point, wide, and deep targets. In order to engage these targets, you should know the appropriate class of fire for each with respect to the gun. Manipulation is the process of moving the machinegun between bursts so that the fire is distributed over a wide, deep or oblique target.

a. **Fixed Fire.**

(1) Fixed fire is fire delivered on a point target.

(2) This is a single target and little or no manipulation is required.

(3) After the initial burst, the gunner will follow any movement of the target without command.

(4) Used to engage point targets.

b. **Traversing Fire.**

(1) Traversing fire is fire distributed against a wide target requiring successive changes in the direction of the gun.

(2) When engaging a wide target the gunner should select successive aiming points throughout the target area. These aiming points should be close enough together to ensure adequate target coverage.

c. **Searching Fire.**

(1) Searching fire is fire distributed in depth by successive changes in the elevation of the gun.

(2) The amount of elevation change depends on the range and slope of the ground.

(3) Used to engage deep targets.

d. **Traversing And Searching.**

(1) Traversing and Searching fire is fire delivered both in width and depth by changes in direction and elevation.

(2) It is employed against [oblique targets] whose long axis is oblique to the direction of the fire.

e. **Swinging Traverse.**

(1) Swinging Traverse is fire employed against targets, which require major changes in direction but little or no change in elevation.

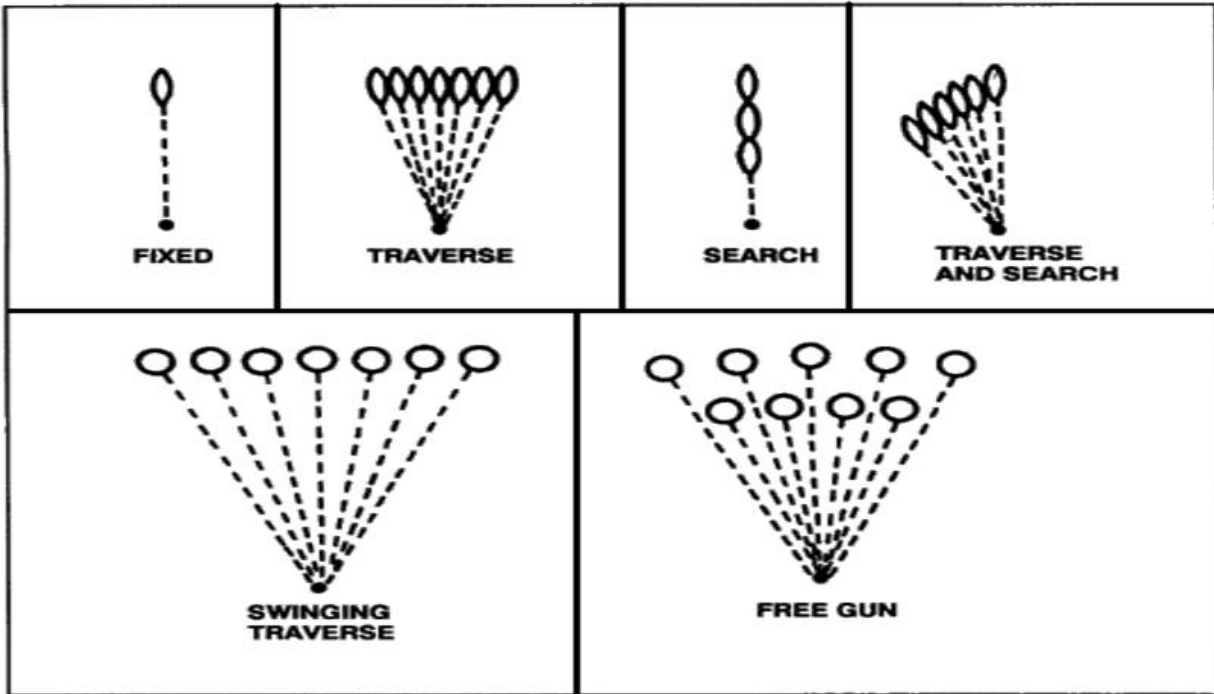
(2) Targets may be dense, of considerable width, in relatively close formations moving slowly toward or away from the gun, or vehicles or mounted troops moving across the front.

(3) The traversing slide lock lever is loosened enough to permit the gunner to swing the gun laterally.

f. **Free Gun.**

(1) Free gun fire is used to deliver fire against moving targets which must be quickly engaged and which require rapid changes in both direction and elevation.

(2) Examples include aerial targets, vehicles, mounted troops, or infantry in close formation moving rapidly toward or away from the gun position.



Classes of fire with respect to the gun.

19. **MDO CHARACTERISTICS.** (MCCS-MMG-1001c)

a. **Characteristics Of The MDO.** The MDO is a full mission-profile sighting system designed for the M240 MMG. The MDO also provides enhanced target identification and increased hit probability out to 1250 meters utilizing the 6x magnification and the Bullet Drop Compensator (BDC).

(1) Magnification. 6 times.

(2) Eye Relief. 2.7 inches.

(3) Field of View. 3.3 degrees/17 feet at 100 meters.

(4) Reticle Pattern. Horseshoe dot with bullet drop compensator (BDC).

(5) Adjustments. 5 clicks = 2" at 100 meters.

(6) Length. 10.5 inches.

(7) Weight. 2.8 pounds.

(8) Waterproof. The optic is guaranteed up to 66 feet

if the adjuster caps are installed properly. The optic has been successfully tested to 500 ft.

(9) Power Supply. Fiber optic & Tritium.

(10) Ranges. Bullet Drop Compensator (BDC) reticle for the MDO ranges from 100-1250 meters.

20. **MDO NOMENCLATURE.** (MCCS-MMG-1001d)

a. **Anti-Reflective Device (ARD)**. The Anti-Reflective Device (ARD) reduces lens glare from the Objective Lens. It is perforated with tiny light-transmitting honeycomb baffles.

b. **Fiber Optic Light Collector**. The Fiber Optic Light Collector will self-adjust reticle brightness during daylight according to ambient light conditions and the tritium will illuminate the aiming point in total darkness.

c. **Elevation Adjuster Cap**. The MDO is internally adjustable. The Elevation Adjuster Cap provides protection to the Elevation Dial. When the cap is removed special attention should be given to ensure the protective O-ring is present and serviceable. The Adjuster Cap must be hand tightened until the Adjuster Cap makes contact with the MDO housing. No tool is required to tighten the caps. The MDO is waterproof only when the Adjuster Cap is installed correctly. Remove the top Adjuster Cap to expose the Elevation Dial.

d. **Azimuth Adjuster Cap**. Azimuth Adjuster Cap provides protection to the Azimuth Dial. The same precautions apply as with the Elevation Adjuster Cap.

e. **Rotating Fiber Optic Cover**. The reticle brightness is adjustable by rotating the cover to cover up the fiber optic light collector.

f. **Throw Lever Mount**. The MDO is secured to the Throw Lever Mount. The MDO is mounted to the weapon's MIL-STD-1913 Rail using the Throw Lever Mount.

g. **RMR**. Ruggedized Miniature Reflex sight allows quick target acquisition at close range up to 100 meters.

h. **RMR Throw Lever Mount**. The RMR is secured to the MDO utilizing this lever mount.

i. **STD-1913 Rail.** A standardized mounting platform for accessories and attachments.



21. **MDO UTILIZATION.**

a. **MDO Bullet Drop Compensator.**

(1) The entire MDO reticle pattern is a Bullet Drop Compensator (BDC). The BDC compensates for the trajectory of the 7.62mm round from 100-1200m.

(2) The POA/POI at the designated distance is shown in Figure 7-1 for the M240 MMG.

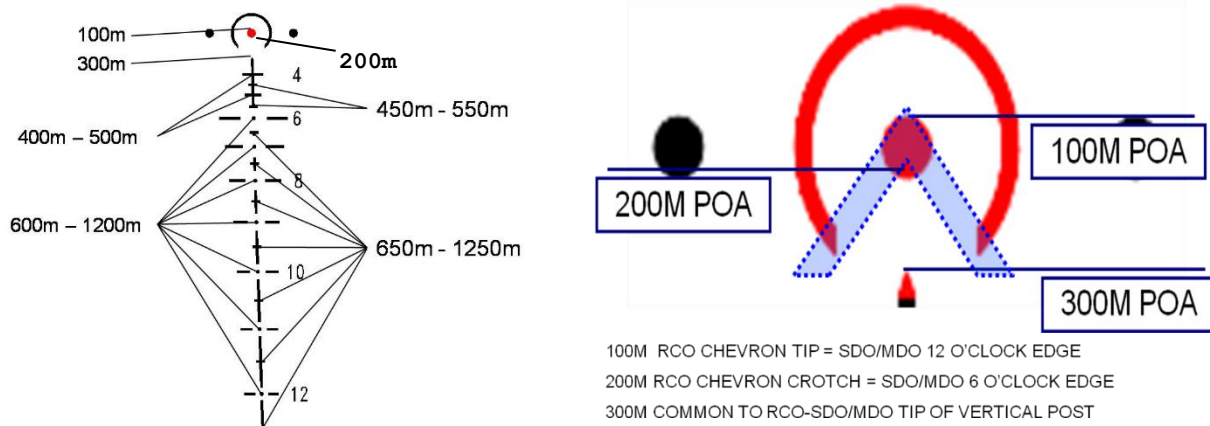


Figure 7-1. MDO BDC M240 MMG

b. **MDO Ranging Features.**

(1) The MDO uses the same aiming reference system as the Rifle Combat Optic, 19 inches at designated meter distances (19" is the average width of a man's shoulders). The outside portion of the Horseshoe represents a 19 inch target at 200m. The open end of the Horseshoe represents a 19" target at 300m. The 400 and 500m horizontal stadia lines below the Horseshoe Dot represent 19" at the indicated range. To range your target beyond 500m, determine which 19" gap fits the target's shoulders (Figure 7-3).

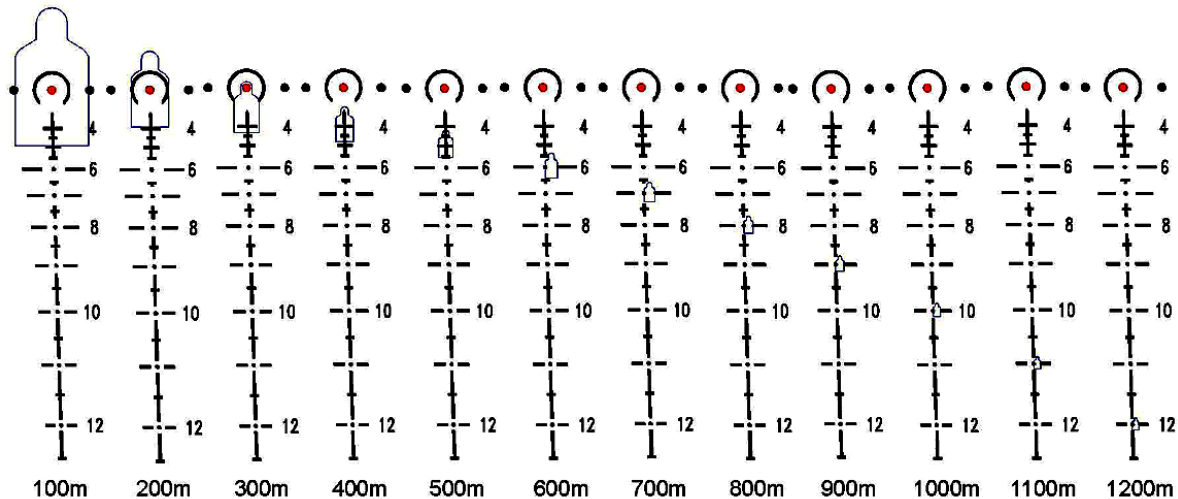


Figure 7-3. Ranging MDO 100-1200m Human Torso

(3) The open areas within the BDC represent 38" at the specified distance (38" is the average height of a man's torso). Targets correctly ranged from 600-1200m (Figure 7-4).

c. **MDO POA/POI After Ranging.** Because the BDC is calibrated for the correct trajectory of the 7.62x51 round, your POA is your POI at each distance. Figure 7-7 illustrates POA/POI for the M240 MMG from 100-1200m.

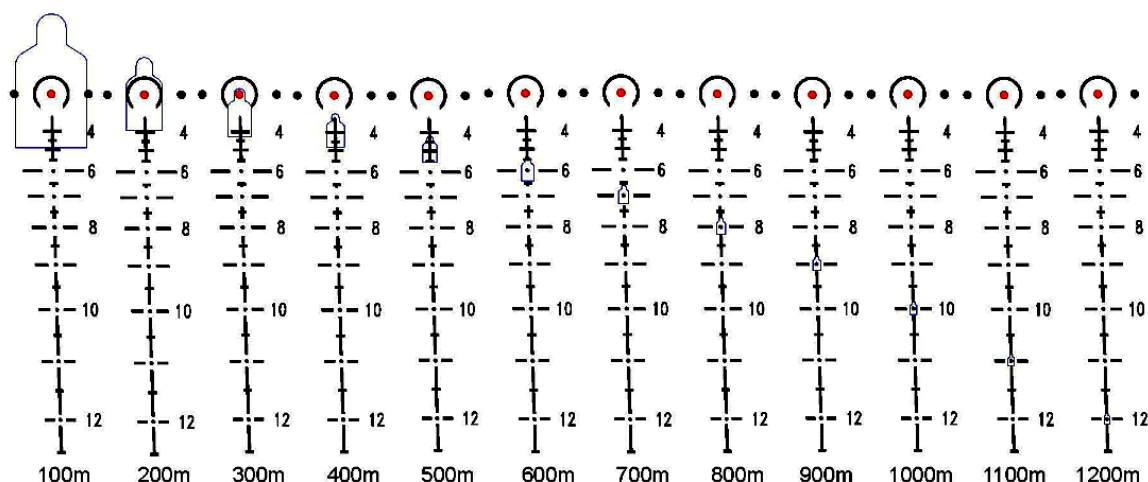


Figure 7-7. POA/POI MDO (Dot) 100-1200m

d. **Aiming The MDO/RMR.** The RMR and MDO may be aimed with ONE or BOTH eyes OPEN. Both eyes open is preferred for moving, close-range targets or to maintain situational awareness. Aiming with one eye is generally only preferred for precise aiming at small, stationary or long-range targets (Figure 9-1).

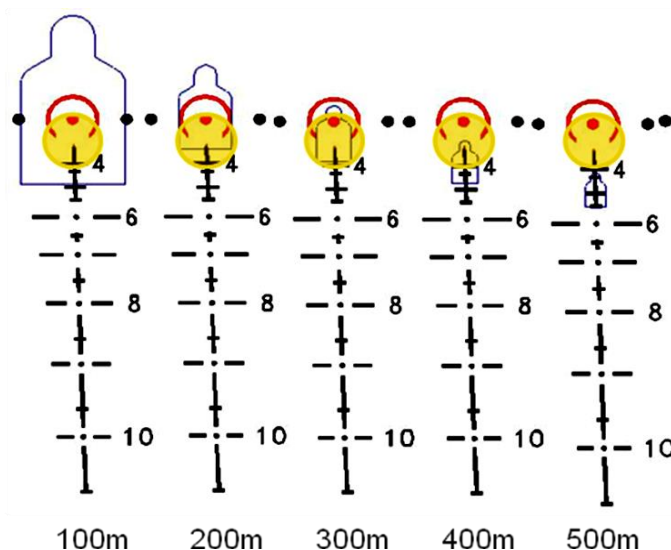


Figure 9-1. RMR POA Relative to MDO 100-500m

(1) **Field Of View (FOV).** To obtain proper eye-relief, place your eye 2.7" from the ocular lens of the MDO (Figure 9-2). Eye-relief will vary depending on firing position and combat equipment; while wearing combat equipment, mount the MDO and shoulder the weapon. Ensure you can achieve eye-relief from the prone (where your eye would be closest to the optic) and

standing firing positions. If your butt stock can telescope, repeat process ensuring stock is in the desired extended position. If the available rail slots are insufficient to achieve eye-relief, the mount may require adjustment in relation to the optic.

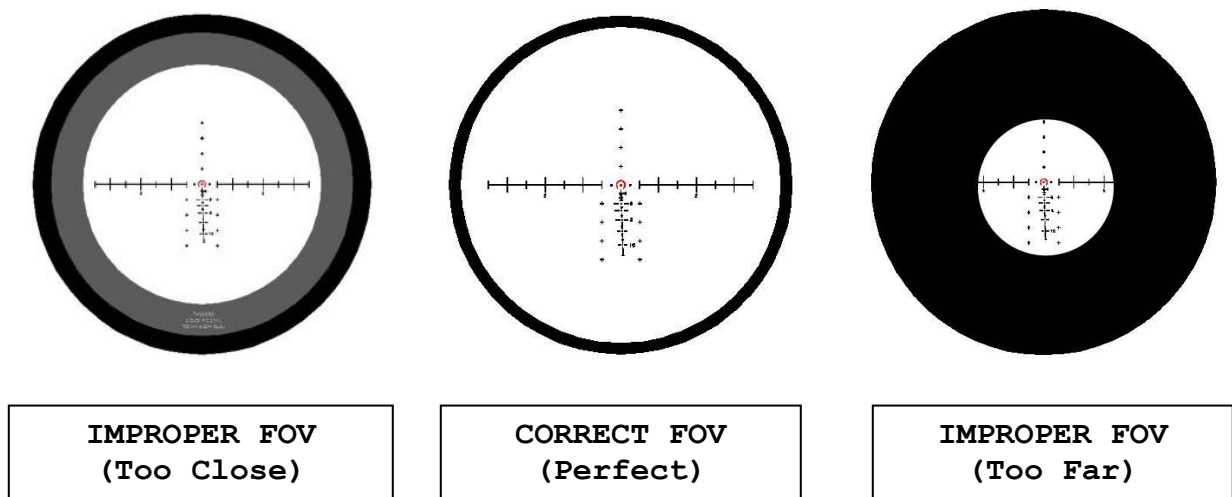


Figure 9-2. MDO Eye-Relief

(2) Aiming. Keep both eyes open and bring the optic to your line-of-sight (close your non-shooting eye if needed). Raise the reticle until you range the shoulders or torso of the intended target (Figure 9-1).

PERFORMANCE EXAMINATION CHECKLIST

0331-MMG-1001

Given an SL-3 complete M240B medium machinegun, tripod, vehicle mount components, authorized cleaning gear, and lubricants, perform operator maintenance for an M240B medium machinegun and associated components to ensure the weapon and components are operational.

Student Instructions:

1. You are a Marine and must perform operator maintenance for an M240B medium machinegun and associated components.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and perform operator maintenance for an M240B medium

machinegun and associated components, to ensure the weapon and components are operational.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Ensure the weapon is in condition 4.			
a. Apply safety rules.			
b. Ensure weapon is on fire.			
c. Pull cocking handle completely to the rear to lock the bolt back.			
d. Maintain positive control of the cocking handle.			
e. Place weapon on safe.			
f. Open cover.			
g. Clear feed tray.			
h. Raise feed tray.			
i. Inspect chamber.			
j. Announce the chamber is clear.			
k. Continue to maintain positive control of the cocking handle.			
l. Place the weapon on fire.			
m. Squeeze the trigger and ease the cocking forward to close and lock the bolt.			
2. Disassemble the M240B medium machinegun.			
a. Remove buttstock and buffer group.			
b. Remove operating group.			
c. Remove trigger housing group.			
d. Remove barrel group.			
e. Remove gas collar.			
f. Remove the gas regulator plug.			
3. Clean the M240B medium machinegun.			
4. Inspect the M240B medium machinegun.			
a. Identify missing parts, as required.			
b. Identify burred parts, as required.			
c. Identify broken parts, as required.			
d. Identify worn parts, as required			
5. Lube the M240B medium machinegun.			
a. Apply lubricants based on climate condition.			
6. Assemble the M240B medium machinegun.			
a. Replace buttstock and buffer group.			
b. Replace bolt and operating rod group.			

c. Replace trigger housing group.			
d. Replace gas collar.			
e. Replace gas regulator plug.			
f. Replace barrel group.			
5. Lube the M240B medium machinegun.			
a. Apply lubricants based on climate condition.			
6. Assemble the M240B medium machinegun.			
a. Replace buttstock and buffer group.			
b. Replace bolt and operating rod group.			
c. Replace trigger housing group.			
d. Replace gas collar.			
e. Replace gas regulator plug.			
f. Replace barrel group.			
7. Perform a function check on the M240B medium machinegun.			
a. Place the weapon on fire.			
b. Lock bolt to the rear.			
c. Maintain positive control of the cocking handle.			
d. Place the weapon on safe.			
e. Depress trigger with weapon on safe.			
f. While maintaining positive control of the cocking handle, place the weapon on fire.			
g. Depress trigger while riding bolt forward.			
8. Clean the tripod.			
9. Inspect the tripod.			
a. Identify missing parts, as required.			
b. Identify burred parts, as required.			
c. Identify broken parts, as required.			
d. Identify worn parts, as required.			
10. Lubricate the tripod.			
a. Apply lubricants based on climate condition.			
11. Inspect the M240B SL-3 components.			
a. Identify missing components.			
b. Identify burred components.			
c. Identify broken components.			
d. Identify worn components.			
12. Clean the M240B SL-3 components.			
13. Lubricate the M240B SL-3 components.			

MCCS-MMG-1001

Given a mounted medium machinegun, ammunition, and a target(s), while wearing a fighting load, engage targets with a medium machinegun to suppress, neutralize, or destroy the target(s).

Student Instructions:

1. You are a Marine and must engage targets with a medium machinegun.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and engage targets with a medium machinegun to suppress, neutralize, or destroy the target(s).

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Assume a firing position.			
2. Make a condition one weapon.			
a. Load the weapon with the cover raised.			
b. Place a belt of ammunition on feed tray.			
c. Close cover.			
d. Ensure the weapon is on fire, pull cocking handle to the rear and place weapon on safe			
e. Return the cocking handle forward.			
3. Identify target(s).			
a. Estimate range utilizing the (MDO).			
b. Utilize (MDO) reticle pattern.			
c. Manipulate Traversing & Elevation Mechanism (T&E).			
4. Engage targets.			
a. React to the team leaders (ADDRAC) direction/corrections.			
b. Respond to corrections.			
c. Make manipulation changes.			
5. Execute immediate action as required.			
a. Announce "MISFIRE."			
b. Wait 5 seconds for a possible hang fire.			
c. Manipulate cocking handle.			

d. Pull the bolt to the rear and watch for feeding and ejecting.			
e. Wait 5 seconds for a possible cook off.			
6. Execute remediate action as required.			
a. Verbally state the actions to stop a runaway gun.			
7. Change barrel, as required.			
8. Reload machinegun, as required.			
a. Load the weapon with the cover raised.			
b. Place a belt of ammunition on feed tray.			
c. Close cover.			
d. Ensure the weapon is on fire, pull cocking handle to the rear and place weapon on safe.			
e. Return the cocking handle forward.			
9. Search and assess.			
a. Manipulate the Traversing and Elevation Mechanism.			
b. Observe impact of rounds.			
10. Make a Condition Four weapon as required.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
TM 11792A-OI	Machine Gun Day Optic, SU-260/P	Entire TM
MARADMIN 173/01	Machine Gun Weapon Conditions	Entire Order
MCTP 3-01C	Machine Guns and Machine Gun Gunnery	Entire Manual
TM 08670A/09712A-10/1B	Operator's Manual for Machine Gun, 7.62mm, M240	Entire TM
TM 06510C-12/1	MK125 Machine Gun Tripod	Entire TM

NOTES :

STUDENT OUTLINE

ZERO RIFLE OPTICS

MCT0303

7/16/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given a service rifle/Infantry Automatic Rifle (IAR) with primary aiming device, individual field equipment, sling, magazines, ammunition, and a target, zero the weapon to achieve 3 out of 5 shots within a 4 minute of angle group at a specific range. (0300-RFL-1003)

(2) Given a service rifle/Infantry Automatic Rifle (IAR), sling, Mini-Integrated Pointer Illuminator Module (MIPIM), night vision device, magazines, ammunition, a target, and a dark environment, while wearing a fighting load, zero the night aiming device to achieve Point of Impact (POI) on Point of Aim (POA) at a specific range. (0300-RFL-1007)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a diagram and a list of choices, identify the nomenclature of a Rifle Combat Optic (RCO) in accordance with TM 11064-OR/1A. (0300-RFL-1003a)

(2) Given a list of choices, identify the characteristics of a Rifle Combat Optic (RCO) in accordance with TM 11064-OR/1A. (0300-RFL-1003b)

(3) Given a diagram and a list of choices, identify the nomenclature for the AN/PEQ-16A in accordance with MCRP 8-10B.2. (0300-RFL-1007a)

(4) Given a diagram and a list of choices, identify the nomenclature for the AN\PEQ-15 in accordance with TM 10470B-OI/1. (0300-RFL-1007b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to develop the tools necessary to zero your service rifle which is essential to combat marksmanship. I will do this by covering the nomenclature of the RCO, characteristics of the RCO, installing the RCO on the weapon, zero the RCO, and night aiming device. Success depends upon your ability to perform these skills without error. This lesson relates to the Combat Marksmanship lesson you will receive here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. NOMENCLATURE OF THE RIFLE COMBAT OPTIC (RCO). (0300-RFL-1003a)



a. The **elevation adjuster cap** is located on top of the RCO. It is used for adjusting the elevation.

b. The **eye piece** is located at the back of the RCO. It is used for magnification and protection of the RCO.

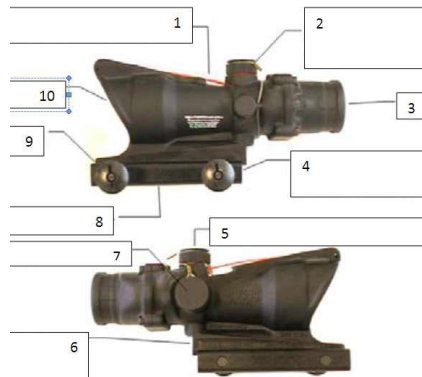
c. The **fiber optic light collector** is located forward of the elevation adjuster on top of the RCO and is used for gathering light for the RCO.

d. The **roof prism** is located inside the RCO in between the eye lenses and the elevation adjuster. It is used for

reflecting the image off of the objective lens, to the eye lenses, to the shooter's eye.

e. The **windage adjuster cap** is located on the right side of the RCO as you are looking through the eye lenses. It is used for adjusting right and left.

f. The **objective lens** is located in the front of the RCO. It is used for magnifying and protection.



2. CHARACTERISTICS OF THE RCO. (0300-RFL-1003b)

- a. Objective lens: 32mm.
- b. Magnification power: 4x.
- c. Eye relief: 1.5 in (38.1mm).
- d. Field of view: 7 degrees/36.8 ft at 100 yards.
- e. Length: 5.8 inches.
- f. Weight: 15.3oz (430g) (with mount), 11oz (310g) (without).
- g. Waterproof up to: 66ft (with adjuster caps properly installed).
- h. The base of the chevron and the horizontal stadia lines below the chevron represent 19 inches at the indicated range (19 inches is the average width of a man's shoulders).

3. INSTALLING THE RCO ON THE WEAPON. (0300-RFL-1003)

To be combat effective, it is essential for the Marine to know how to zero their service rifle. Zeroing is adjusting the

sights on the weapon to cause the shots to impact where the Marine aims. This must be accomplished while compensating for the effects of weather and the range to the target. It is critical that Marines can zero their service rifles and make the sight adjustments required to engage targets accurately.

a. **Nomenclature Of The Service Rifle.**

(1) The service rifle is defined as either the M16A4 rifle or M4 carbine equipped with a RCO. The service rifle is a lightweight, 5.56-mm, magazine-fed, gas-operated, air-cooled, shoulder-fired rifle.

(2) The service rifle fires in either semiautomatic (i.e., single-shot) mode or in a three-round burst using a selector lever. The M16A4 rifle has a maximum effective range of 550 meters for individual or point targets.

(3) The service rifle is equipped with a rail system known as a Military-Standard [MIL-STD]-1913, an accessory mounting rail for small arms weapons. This bracket is used on some firearms to provide a standardized mounting platform for optics and other accessories (e.g., tactical lights, laser sighting modules). The rail system is placed directly on the weapon's receiver in the position normally occupied by the rear sights. This is where the RCO will be mounted on the service rifle.



Figure 3-1. M16A4 Rifle.

b. **Installation Procedures MIL-STD 1913 Rail.**

(1) The LT799 mount can be installed in three different positions to adjust for eye relief. The RCO can be centered, shifted 5/8-inch aft, and shifted 5/8-inch forward. The two mount screws have a permanent lock patch, which allows repeated

use. No additional threat locking treatment are required or authorized. Mount the RCO in a position that provides proper eye relief.



Figure 2-1. LT799 Mount Eye Relief Adjustments

(2) Open the two throw levers, front lever first, and then slide the secondary lock to the open position and open the rear lever.



Figure 2-2. LT799 Mount Throw Levers Closed

(3) The LT799 mount is open when the front and rear throw levers are pointing forward



Figure 2-3. LT799 Mount Throw Levers Open

(4) With the throw levers open, place the RCO onto the MIL-STD-1913 rail. Hook the left side of the mount to the rail,

then lower the optic. Ensure the interface stud on the bottom of the mount rests in a groove on the rail.



Figure 2-4. Installing the Rifle Combat Optic with the LT799 Mount on the MIL-STD-1913 Rail

(5) Once the mount is resting on the rail, eliminate any front to rear movement by pushing the optic mount forward. While maintaining forward tension, lock the RCO by first closing the rear locking lever, then the front lever. The RCO mount is locked when both throw levers are facing to the rear and the secondary lock is slid forward to lock into the mount.



Figure 2-5. Rifle Combat Optic with LT799 Mount Installed on the MIL-STD-1913 Rail

4. **ZEROING THE RCO.** (MCT-RFL-1003)

a. **Marksmanship Fundamentals.**

(1) Marksmanship fundamentals are critically important during the zeroing process. The shooter must build a shooting position that will allow for the maximum amount of stability of hold, bone support, muscular relaxation, and recoil management (prone position). Additionally, other elements of marksmanship must be focused on in order to achieve a good zero, such as:

natural point of aim, natural respiratory pause, sight picture, and trigger control.

(2) With the RCO, improper eye relief can cause scope shadow, which can result in improper shot placement, because what appears in the center of the optic is offset by the shadow (see figs. 5-2, 5-5, and 5-6). With the RCO, if eye relief is too far, scope shadow may occur and the field of view will be smaller, affecting zero and shot placement. Focus on the reticle to acquire the necessary precision aim.

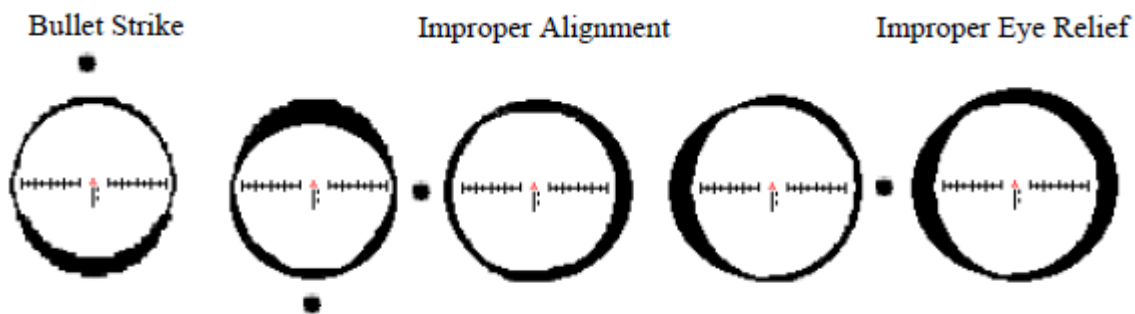


Figure 5-2. Scope Shadow

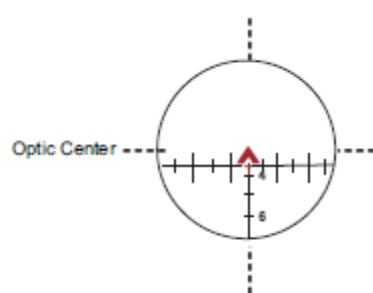


Figure 5-5. No Scope Shadow.

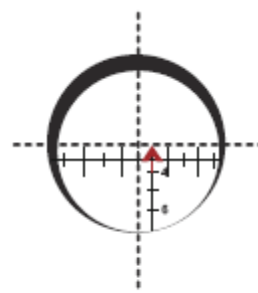
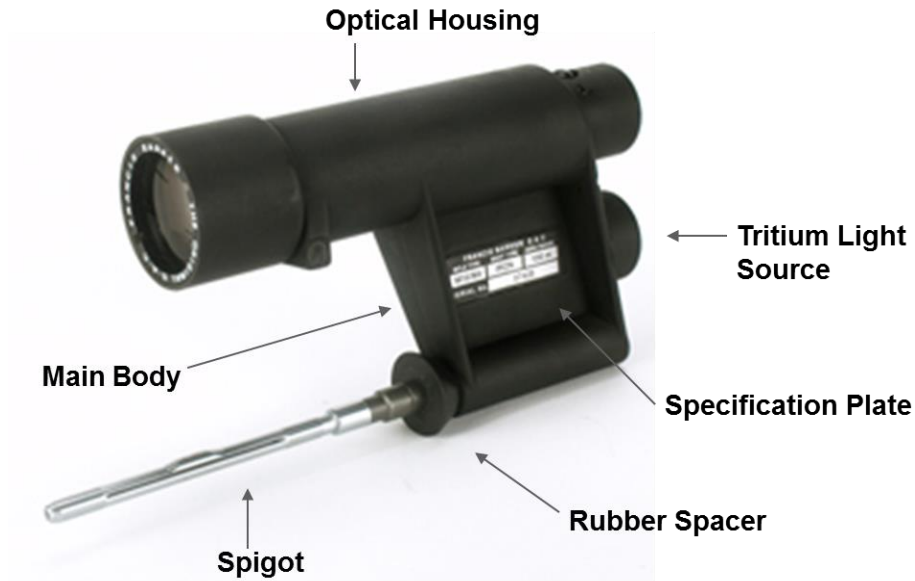


Figure 5-6. Scope Shadow.

b. **Pre-Zero Sight Setting.** To establish a pre-zero sight setting, Marines will utilize the Small Arms Collimator (SAC). The SAC allows Marines to rapidly attain an accurate bore-sight and to re-verify zero without the use of ammunition. While live fire confirmation is always desired, with proper use of the SAC the Marine can ensure a more accurate initial group that allows a quicker confirmation. Whenever possible, a SAC should be assigned to a specific weapon or group of weapons to maintain consistency of use.



(1) Operating The Collimator.

(a) Apply a light coat of CLP on the mandrel.

(b) With the optical housing at the 9 o'clock position from the shooter's perspective, carefully insert the mandrel into the barrel of the weapon allowing the rubber spacer to get close to the compensator without contacting it.

(c) Rotate the SAC clockwise to the vertical position, ensuring that the grid pattern is properly aligned.

(d) Adjustment of the RCO reticle is opposite of live fire. Clock-wise is left and down.

(e) The correct zero position (CZP) is located at the "I,9" on the SAC grid with 100m aim point of the RCO reticle at the point of the inverted triangle. This position is used to find the theoretical center line of bore to allow the shooter firing the weapon for the first time to achieve first round impacts on paper.

(f) After finding your zero, remove the collimator ensuring you clean any CLP on the mandrel.



(2) Adjusting The Reticle On The RCO.

(a) The RCO is externally adjustable for windage and elevation, while the original RCO is internally adjustable. The adjuster screws position the internal roof prism. For this reason, a light tap on adjusters after an adjustment has been made will ensure proper seating of the internal mechanism, and allow for an accurate zero. If a light tap to the adjuster is not applied, the first round may be inaccurate.

(b) Remove the top adjuster cap to expose the elevation dial. Remove the side adjuster cap to expose the windage dial.

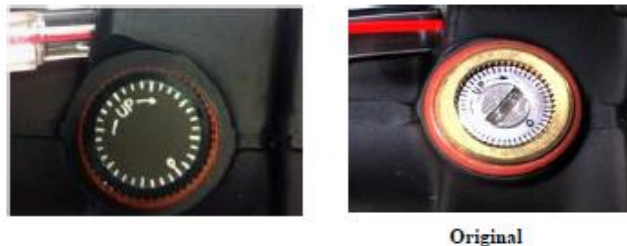


Figure 3-1. Elevation Dial



Figure 3-2. Windage Dial

(c) Adjustment increments are one centimeter per click at 100m. On the original RCO this can be accomplished with the use of a coin, bladed screwdriver, or the extractor rim of the 5.56mm casing. Clicks are audible and tactile.

1. Turn the elevation dial in the direction of the arrow (clockwise) to move the strike of the round up. Turn

the elevation dial counterclockwise to move the strike of the round down.

2. Turn the windage dial in the direction of the arrow (clockwise) to move the strike of the round right. Turn the windage dial counterclockwise to move the strike of the round left.

3. Note. Adjustment of the RCO reticle during the collimating process is opposite of live-fire. Clock-wise is left and down to adjust reticle to the correct zero position (CZP) located at the "I,9."

(7) To prevent damage to the adjuster caps or adjuster cap housing, do not cross thread caps. Ensure caps are completely screwed down and contacting the main housing.

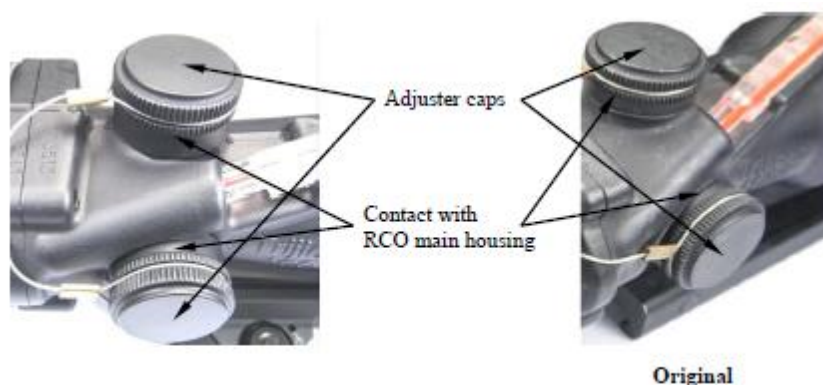


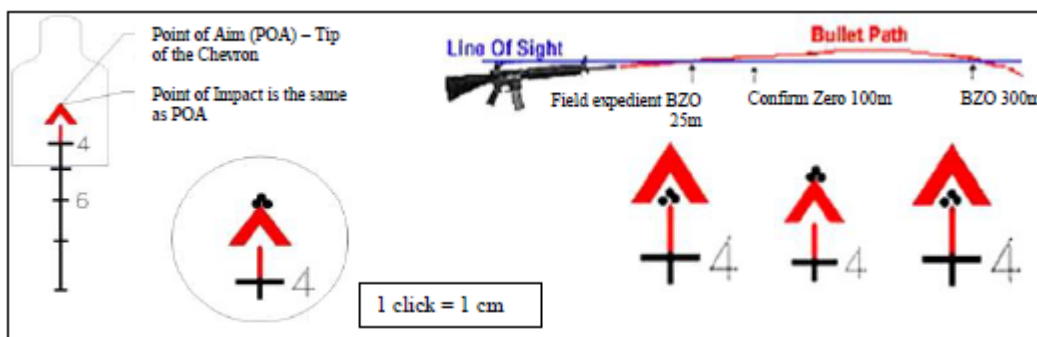
Figure 3-3. Replacing the Adjuster Caps on the Rifle Combat Optic

c. Zeroing Procedures.

(1) When zeroing the RCO at 100 meters, the tip of the illuminated chevron is used to acquire Point of Aim/Point of Impact (POA/POI). This method ensures maximum accuracy to 800 meters utilizing the BDC. At 100 meters, moving the adjuster (3) clicks will move the POI approximately (1) inch.

(2) Zeroing the RCO at 25 meters provides a field expedient zero. To acquire the field expedient zero, use the tip of the 300-meter aiming post to acquire POA/POI. This can be accomplished on any approved or field expedient target. At 25 meters, moving the adjuster (4) clicks will move the POI approximately (1) centimeter.

(a) After acquiring your 25 meter field expedient Zero, a 100/300m confirmation shoot should be utilized to ensure a proper zero of the RCO.



(3) To Zero The RCO.

(a) Place a suitable target with an aiming point that is 4 inches in diameter and in contrast with the background.

(b) Establish a stable, supported prone firing position using artificial support. Some examples could be sand bags, assault pack, or bipod legs.

(c) Fire five rounds to obtain a shot group.

(d) Triangulate the shot group to find the center; mark shots holes with pen or marker.

(e) Determine the vertical and horizontal distance in inches from the center of the shot group to the center of the target.

(f) Adjust the reticle to move the center of the shot group to the desired point of impact. Four clicks will move the strike of the round 1cm at 25 meters for both windage and elevation. These steps are repeated until the group is within the desired point of impact.

(g) Fire five rounds to obtain a shot group.

(h) Triangulate the shot group to find the center

(i) Adjust the reticle to move the center of the shot group to the desired point of impact.

(j) Fire five rounds to confirm the zero. The Service rifle is considered zeroed when a shot group is inside the 4-inch aiming area of the target.

5. **NIGHT AIMING DEVICE.** (0300-RFL-1007a & 1007b)

a. **AN/PEQ-16A.**

(1) Nomenclature. The AN/PEQ-16A (mini-integrated pointer illuminator module) is a multifunction laser device that emits visible or infrared (IR) light for precise weapon aiming and target and/or area illumination. It is equipped with a white light illuminator. It is hand held, weapon mounted, and battery operated (requires two 3-volt batteries). See figure 15-6.

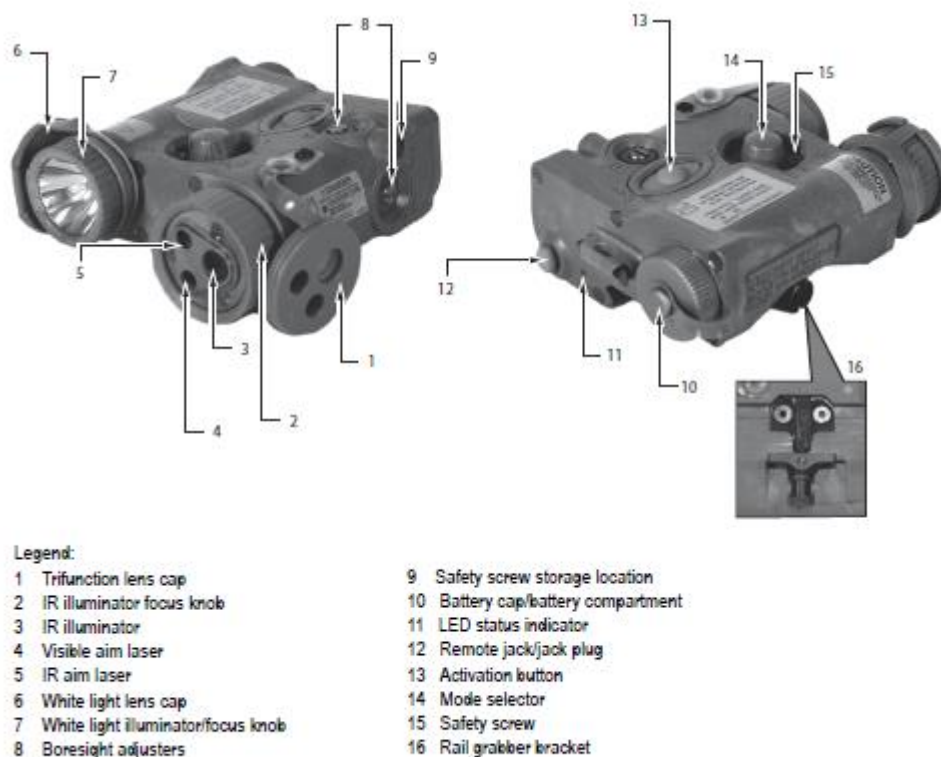


Figure 15-6. AN/PEQ-16.

b. **AN/PEQ-15.**

(1) Nomenclature. The AN/PEQ-15 is a multifunction laser device that emits visible or infrared (IR) aim laser for precise weapon aiming and target and/or area illumination. It is hand held, weapon mounted, and battery operated (requires one 3-volt batteries). See figure 15-3.

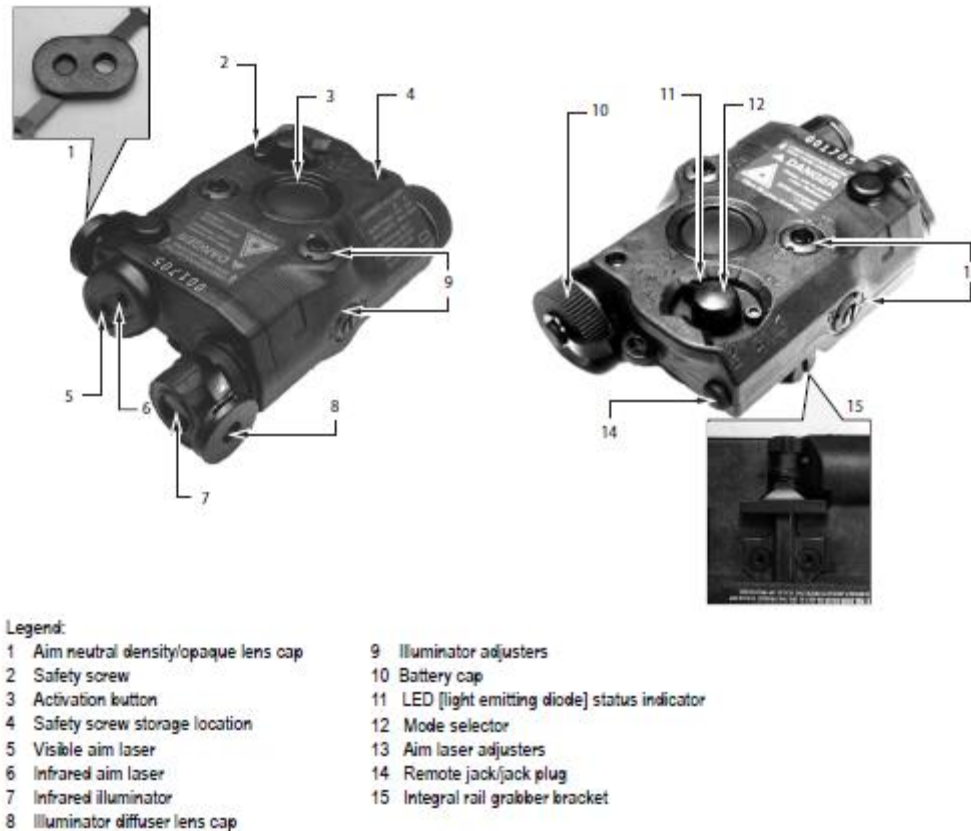


Figure 15-3. AN/PEQ-15 Features and Controls.

(a) #1 Aim Neutral Density (ND)/Opaque Lens Cap. A double-sided lens cap that, when placed over the Aim Lasers, reduces power output from the IR Aim Laser and completely prevents emission from the Visible Aim Laser.

(b) #2 Safety Screw. When installed in the Lockout Position, the Safety Screw prevents the Mode Selector from being turned to the high power laser settings (i.e., AH, IH, DH). Removal of the Safety Screw allows for access to all modes of operation.

(c) #3 Activation Button. When in P (PROGRAM) mode, the Activation Button allows for programming the IR Illuminator pulse rate. When in one of the six operational laser modes (i.e., VIS-AL, AL, DL, AH, IH, DH), the Activation Button is used to actively emit laser radiation that corresponds with the position of the Mode Selector.

(d) #4 Safety Screw Storage Location. Allows for secure storage of the Safety Screw after it has been removed from the Lockout Position.

(e) #5 Visible Aim Laser. Used to provide a precision aim point or to positively identify targets at close range during the day or night, without the need of night vision devices. It may also be used for bore sighting the ATPIAL during daylight hours.

(f) #6 Infrared Aim Laser. Used with night vision devices to provide a precision aim point or to mark targets.

(g) #7 Infrared Illuminator/Focus Knob. Used with night vision devices to provide variable focused IR illumination of the intended target area. The Illuminator Focus Knob is rotated to vary the illumination beam spread from flood to spot, based on the range and size of the area to be illuminated.

(h) #8 Illuminator Diffuser Lens Cap. When installed over the IR Illuminator, spreads the laser energy over an angle of approximately 180 degrees, allowing for illumination of a wider area. This is useful for illuminating a small room and is most effective when used with the IR Illuminator Focus Knob adjusted to the widest beam (flood) setting.

(i) #9 Illuminator Adjusters. These adjusters can be rotated in azimuth and elevation to bring the illumination area over the aiming beam, and can be used to align the IR Illuminator with the barrel of the weapon.

(j) #10 Battery Cap/Battery Compartment. Provides secure housing for the 3-volt DL123A battery that powers the ATPIAL.

(k) #11 LED Status Indicator. A Light Emitting Diode (LED) used to indicate when the ATPIAL is emitting laser energy, when the battery power is low, and displays the pulse rate during programming of the IR Illuminator.

(l) #12 Mode Selector. Allows the user to select the desired mode of operation for the ATPIAL. When switched to O (OFF), the ATPIAL will not emit laser energy.

(m) #13 Aim Laser Adjusters. These adjusters can be rotated to simultaneously bring the Visible and IR Aim Lasers into azimuth and elevation alignment with the barrel of the weapon.

(n) #14 Remote Jack/Jack Plug. Provides an interface for the Remote Cable Switch. The ATPIAL comes with a

Remote Jack Plug installed to protect the Remote Jack from debris and moisture.

(o) #15 Integral Rail Grabber Bracket. Secures the ATPIAL to a weapon equipped with a MIL-STD-1913 rail.

(2) Mode Selector Positions. Modes of operation for the AN/PEQ-15 are accessed by turning the Mode Selector to the desired position.



Position	Mode	Remarks
VIS AL	VISIBLE AIM Class 3a	Visible Aim Laser is selected. Visible without the use of night vision devices.
O	OFF	The ATPIAL will not operate. Prevents inadvertent emission of laser energy.
P	PROGRAM	Programming Mode is selected to set the desired Infrared (IR) Illuminator pulse rate.
AL	AIM LOW Class 1	IR Aim Laser is selected at low power. Visible with the use of night vision devices.
DL	DUAL LOW Class 1/3a	IR Aim Laser and IR Illuminator are both selected at low power. Visible with the use of night vision devices.
AH	AIM HIGH Class 3b	IR Aim Laser is selected at high power. Visible with the use of night vision devices.
IH	ILLUMINATOR HIGH Class 3b	IR Illuminator is selected at high power. Visible with the use of night vision devices.
DH	DUAL HIGH Class 3b	IR Aim Laser and IR Illuminator are both selected at high power. Visible with the use of night vision devices.

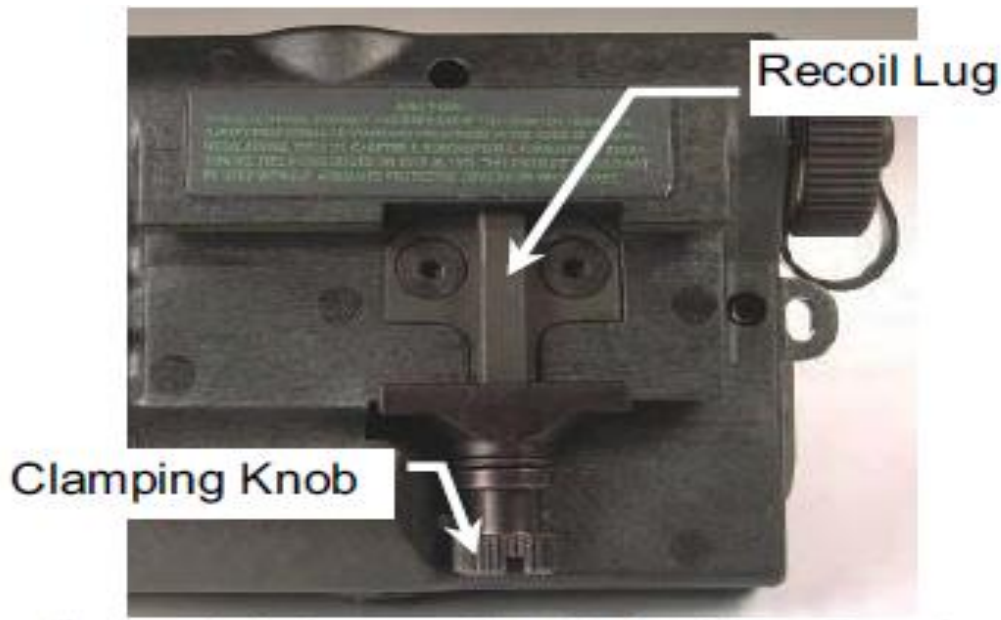
(3) Mode Activation. Once the mode of operation has been selected, ATPIAL may be used in that mode by activating the system as follows:

(a) Momentary Operation. Pressing and holding the Activation Button operates the ATPIAL in the selected mode. When the button is released, the ATPIAL turns off

(b) Continuous Operation. Pressing the Activation Button twice in rapid succession (double-tap) will turn the ATPIAL on in the selected mode. The ATPIAL will remain on until the button is pressed a third time (single-tap) or after five minutes of continuous operation, whichever comes first.

c. **Mounting the AN/PEQ-15.**

(1) Rail Grabber Bracket. The ATPIAL is equipped with an integral Rail Grabber Bracket that is designed for direct attachment to weapon.



(2) Loosen the Clamping Knob on the integral Rail Grabber Bracket until the jaws have sufficient space to fit over the rail.

(3) Mount the ATPIAL to the weapon by positioning the Rail Grabber Bracket in the desired Recoil Groove of the rail, pushing down and forward to ensure the laser system is properly seated. Turn the Clamping Knob clockwise until as finger tight as possible. Take note of the screw slot in the clamping knob and using an appropriate tool (e.g., screwdriver, multipurpose tool, etc.), turn the clamping knob an additional 3/4 turn to properly secure the ATPIAL to the rail.

(4) Possible ATPIAL mounting configurations to be used with various weapons.

Mounting Configurations

M16A4	Top, Left, or Right Mount
M4/M4A1	Top, Left, or Right Mount

d. Boresighting/Zeroing Procedures.

(1) Boresight Adjusters. The ATPIAL Aim Lasers are co-aligned. Therefore, a single set of adjusters moves both aiming beams. Boresighting/zeroing can be accomplished using either the Visible or IR Aim Laser. Table 2-2 indicates the direction

of adjuster rotation and resultant shot group movement when the ATPIAL is Top Mounted.



Figure 2-10 Aim Laser Adjusters (Top Mounted)

Table 2-2 Shot Group Movement for Aim Lasers
(Top Mounted)

Adjuster	Rotation	Shot Group Movement
Top Adjuster Elevation	CW CCW	Up Down
Side Adjuster Windage	CW CCW	Right Left

The following abbreviations and their definitions apply solely to the last two columns of Table 2-5:

L	Left	R	Right
U	Up	D	Down
VIS	Visible Aim Laser	IR	IR (Infrared) Aim Laser

(2) Boresighting Procedures. The ATPIAL incorporates a unique zero preset feature which enables the co-aligned lasers to be nearly zeroed when initially attached to the weapon (within 4 inches vertically and horizontally of the mechanical axis of the weapon's barrel at 25 meters).

(a) To establish this zero preset, rotate the Boresight Adjusters to the full CCW end of travel, then rotate them back 2.5 turns.

(b) After establishing the zero preset, the ATPIAL may be zeroed to the weapon via live fire at a 25-meter range.

(c) Prior to utilizing any night aiming device for a live-fire event, the night aiming device will be co-witnessed with a properly zeroed RCO. Using the 300 meter aim point at a specified point on a target, the visible aim laser will adjusted another specified point on the same target. Once the 300 meter aim point and laser are co-aligned, the night aiming device is successfully co-witnessed.

e. Zeroing On A 25-Meter Range. This procedure is used to zero the ATPIAL to the M16A4 Service Rifle.

(1) On a 25-meter zeroing target, mark the designated strike point and designated strike zone for the weapon.

(2) Mount the target on an "E" silhouette or other suitable surface at 25 meters.

(3) Mount the ATPIAL to the weapon.

(4) Rotate the Mode Selector to the VIS-AL position.

(5) Activate the VIS Aim Laser in continuous mode by double-tapping the Activation Button and direct the Aim Laser to the center of the target.

(6) During lowlight, use IR Aim Laser with a night vision device.

(7) Fire a 5-round shot group and note the center of the shot group relative to the designated strike point. Retighten the integral Rail Grabber Bracket.

(8) Rotate the Boresight Adjusters to move the center of the shot group to the designated strike point.

(9) Fire another 5-round shot group and again observe the center of the new shot group relative to the designated strike point.

(10) When four out of five consecutive rounds are in the designated strike zone, the ATPIAL /weapon combination is zeroed.

PERFORMANCE EXAMINATION CHECKLIST

0300-RFL-1003

Given a service rifle/Infantry Automatic Rifle (IAR) with primary aiming device, individual field equipment, sling, magazines, ammunition, and a target, zero the weapon to achieve 3 out of 5 shots within a 4 minute of angle group at a specific range.

Student Instructions:

1. You are a Marine and must zero the weapon.
2. There is no time limit for this task.
3. To achieve mastery, you must complete the performance checklist and zero the weapon to achieve 3 out of 5 shots within a 4 minute of angle group at a 25 meters.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Mount the RCO to the service rifle.			
a. Obtain optimal eye relief.			
b. Align the interface studs with the grooves on the MIL-STD-1913 rail of the flat top of the receiver.			
c. Apply forward pressure on the optic and tighten the throw levers firmly.			
d. Mark the position of the interface bar clamp with an indelible marker or other semi permanent means.			

2. Establish a pre-zero sight setting on the service rifle.			
3. Assume a stable firing position.			
4. Place weapon in Condition 1.			
a. Ensure the weapon on safe.			
b. Insert the magazine fully in to the magazine well.			
c. Tug magazine to ensure it is seated.			
d. Cock the weapon via the charging handle with the non-firing hand.			
e. Conduct a chamber check.			
f. Tap the forward assist.			
g. Close the ejection port cover.			
5. Fire a 5 round shot group.			
a. Assume the supported prone position.			
b. Adjust sling for the prone position.			
c. Apply the fundamentals of marksmanship.			
d. Place the weapon on safe after rounds complete.			
6. Identify the center of shot group.			
a. Determine/mark location of 5 shot holes.			
b. Triangulate center distance with measuring equipment.			
c. Mark the center of the shot group.			
7. Determine required sight adjustments.			
8. Make required sight adjustments.			
9. Repeat steps 4 thru 8, as required.			
10. Fire a confirmation group, as required.			

0300-RFL-1007

Given a service rifle/Infantry Automatic Rifle (IAR), sling, a night aiming device, individual field equipment, and an offset target, zero the night aiming device to achieve Point of Impact (POI) on Point of Aim (POA) at a specific range.

Student Instructions:

1. You are a Marine and must boresight the visible aim laser at 10 meters.
2. There is no time limit associated with this task.

3. To achieve mastery, you must complete the performance checklist and boresight the visible aim laser at 10 meters to achieve Point of Impact (POI) on Point of Aim (POA).

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Mount the night aiming device to the service rifle/Infantry Automatic Rifle (IAR).			
a. Ensure the weapon is Condition 4.			
b. Position the integral rail grabber bracket on the rail.			
c. Ensure the recoil lug is seated in the desired recoil groove of the rail.			
d. Turn the clamping knob clockwise until finger tight.			
e. Tighten the clamping knob $\frac{3}{4}$ turn clockwise with appropriate tool.			
2. Rotate the Mode Selector to visible aim laser.			
3. Activate the Aim Laser in continuous mode.			
a. Ensure that the night aiming device has a battery inserted.			
b. Confirm the Aim Laser is on continuous mode.			
4. Adjust the laser to align with the desired point of aim at a specific range.			
a. Place a target 10 meters from the firing line.			
b. Adjust top adjuster.			
c. Adjust side adjuster.			
5. Repeat adjustments until aim beam is centered.			
6. Apply a positive load to the adjusters.			
a. Turn each adjuster eight clicks clockwise.			
b. Turn each adjuster eight clicks counter-clockwise back to boresight position.			
7. Adjust flood light to desired width, as required.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGES</u>
TM 10471A-12&P/1	Laser Boresight System	Entire Manual

MCO 3574.2_	Marine Corps Combat Marksmanship Program	Entire Manual
TM 11407A-OI	Mini Integrated Pointer Illuminator Module (MIPIM) AN/PEQ-16A	2-4 through 2-13
TM 10470B-OI/I	Operator's and Field Maintenance Manual for the Advanced Target Pointer Illuminator Aiming Light (AN/PEQ-15)	Chapter 6
TM 05538/10012-OR	Operator's Manual with Components list for Rifle M16A2, Rifle M16A4, Carbine M4, Carbine M4A1 CQBW (Sep 2012)	Entire Manual
TM 11064-OR/1A	Operators Manual, Rifle Combat Optic (RCO) M7, AN/PVQ-31, AN/PVQ-31A, and AN/PVQ-31B	1-2 through 1-4
MCRP 8-10B.2	Rifle Marksmanship	Entire Manual

NOTES:

STUDENT OUTLINE

COMBAT MARKSMANSHIP

MCT0304

7/2/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given a service rifle/Infantry Automatic Rifle (IAR), with primary aiming device, fighting load, sling, magazines, ammunition, and threat targets between 26 and 500 meters, engage mid to long range threats (day) to eliminate 60% of exposed threats, during execution of Combat Marksmanship Table 3. (0300-RFL-1006)

(2) Given a service Rifle/Infantry Automatic Rifle (IAR), with primary aiming device, Mini-Integrated Pointer Illuminator Module (MIPIM), night vision device, fighting load, magazines, ammunition, and threat targets between 26 and 200 meters, engage mid-range threats (night) to eliminate 50% of exposed threats during execution of Combat Marksmanship Table 4. (0300-RFL-1008)

(3) Given a service Rifle/Infantry Automatic Rifle (IAR) with primary aiming device, fighting load, sling, magazines, ammunition, and threat targets from 5 to 25 meters, engage Short Range Threats (Day) to eliminate 80% of exposed threats during execution of Combat Marksmanship Table 5. (0300-RFL-1009)

(4) Given a service Rifle/Infantry Automatic Rifle (IAR), with primary aiming device, Mini-Integrated Pointer Illuminator Module (MIPIM), night vision device, fighting load, magazines, ammunition, and threat targets between 5 and 25 meters, engage Short Range Threats (Night) to eliminate 50% of exposed threats during execution of Combat Marksmanship Table 6. (0300-RFL-1010)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a diagram and a list of choices, identify how to estimate range utilizing the RCO in accordance with MCRP 8-10B.2. (0300-RFL-1006a)

(2) Given a list of choices, identify threat precedence in accordance with MCRP 8-10B.2. (0300-RFL-1006b)

(3) Given a service Rifle with primary aiming device, fighting load, sling, magazines, and threat targets from 5 to 25 meters, demonstrate a box drill in accordance with MCRP 8-10B.2. (0300-RFL-1009a)

(4) Given a service Rifle with primary aiming device, fighting load, sling, magazines, and threat targets from 5 to 25 meters, demonstrate shoot on the move drill in accordance with MCRP 8-10B.2. (0300-RFL-1009b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to provide you with the basic knowledge required to properly identify and employ the M16A4 Service Rifle. To do this we will be discussing weapons handling, Service Rifle firing positions, and target engagement.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. WEAPONS HANDLING. (0300-RFL-1006a)

a. Weapons handling procedures provide a consistent and standardized way for Marines to handle, operate, and employ the Service Rifle safely and effectively. Proper weapons handling procedures ensure the safety of Marines by eliminating negligent discharges and reinforcing positive identification of targets before engagement.

b. **Safety Rules.** Safe Service Rifle handling is critical. If proper weapons handling procedures are not observed the Marine risks both the Marine's safety and the safety of the Marine's fellow Marines. During combat, the Marine must react quickly, safely, and be mentally prepared to engage targets. To ensure that only the intended target is engaged, the Marine must apply the following safety rules at all times:

(1) Treat every weapon as if it were loaded.

(a) Note: When the Marine takes charge of a Service Rifle in any situation, the Marine must treat the weapon as if

it were loaded, determine its condition, and continue applying the other safety rules.

(2) Never point a weapon at anything you do not intend to shoot.

(a) Note: The Marine must maintain muzzle awareness at all times.

(3) Keep your finger straight and off the trigger until you are ready to fire.

(a) Note: A target must be identified before moving your finger to the trigger.

(4) Keep the weapon on SAFE until you intend to fire.

(a) Note: A target must be identified before taking the weapon off SAFE.

c. **Weapons Conditions.**

(1) Condition 1. Safety on, magazine inserted, round in chamber, bolt forward, and ejection port cover closed.

(2) Condition 2. Not applicable to the Service Rifle.

(3) Condition 3. Safety on, magazine inserted, chamber empty, bolt forward, and ejection port cover closed.

(4) Condition 4. Safety on, magazine removed, chamber empty, bolt forward, and ejection port cover closed.

d. **Weapons Carries.** Weapons carries provide an effective way to handle the Service Rifle while remaining alert to enemy engagement. Weapons carries are tied to threat conditions and are assumed in response to a specific threat situation. The weapons carry that is assumed prepares the Marine, both mentally and physically, for target engagement. The sling provides additional support for the weapon when firing.

(1) Controlled Carry. This carry is used when no immediate danger is present (see fig. 4-16), and the weapon;

(a) Is on SAFE.

(b) Hangs muzzle down in front of the body. The muzzle should point down, just to the outside of the feet, with the buttstock at approximately armpit level. The Marine maintains constant muzzle awareness.

(c) Is controlled with the firing hand grasping the pistol grip.



Figure 4-16. Three-Point Cling Controlled Carry.

(2) Alert Carry. The Marine should carry the Service Rifle at the alert if enemy contact is anticipated. The weapon is on SAFE in the alert carry and allows immediate target engagement. The alert carry is used for moving in close terrain (e.g., urban, jungle). To assume the alert, the Marine will:

(a) Place the Marine's support hand on the rail system, the Marine's firing hand around the pistol grip, the Marine's trigger finger straight along the receiver, and the Marine's firing thumb on top of the selector lever.

(b) Place the buttstock in the Marine's shoulder.

(c) Lower the sights and angle the muzzle downward at 45 to 70 degrees based upon the need for mobility, observation, and muzzle awareness.

(d) Point the muzzle in a safe direction or the general direction of anticipated enemy contact. (See figure 4-20)



Figure 4-20. The Alert Carry.

(3) Ready Carry. The Marine carries the Service Rifle at the ready if enemy contact is imminent. The weapon is on SAFE in the ready carry and allows immediate target engagement. To assume the ready, the Marine will perform the following:

(a) Place the Marine's;

1. Support hand on the rail system.
2. Firing hand around the pistol grip.
3. Trigger finger straight along the receiver.
4. Firing thumb on top of the selector lever.

(b) Place the buttstock in the Marine's shoulder.

(c) Lower the sights to just below eye level so that a clear field of view is maintained for target identification (see fig. 4-21).

(d) Point the muzzle in a safe direction or the general direction of imminent enemy contact.



Figure 4-21. Ready Carry.

e. **Aiming With Rifle Combat Optic (RCO).** The Service Rifle is defined as a M16A4 Service Rifle or M4 carbine equipped with an RCO.

(1) Sight Picture With Rifle Combat Optic.

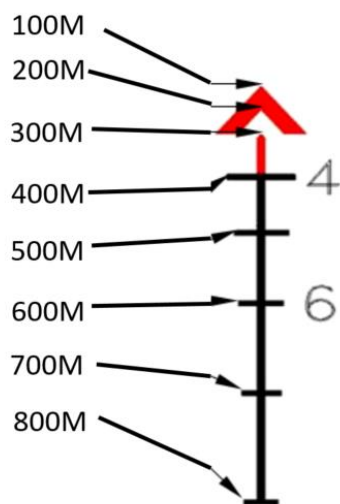
(a) Sight picture is the placement of the optic reticle pattern in relation to the target. The RCO is calibrated to accommodate bullet drop. The reticle pattern of the RCO is a bullet drop compensator with designated aiming points to compensate for the trajectory of the 5.56-mm round at ranges of 100 to 800 meters. This feature eliminates the need for mechanical elevation adjustments on the Service Rifle. Sight picture changes are based on the range to the target, and effects of wind and elevation. To compensate for range to the target, the aiming points seen in figure 5-1, are used with the RCO. The horizontal mil scale is removed to emphasize the bullet drop compensator by performing the following;

1. Hold the tip of the chevron, or the top of the red dot center mass on a target at 100 meters or less.

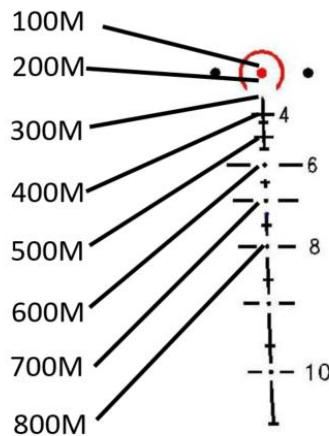
2. Hold the crotch of the chevron, or the bottom of the red dot center mass on a target at 200 meters.

3. Hold the tip of the red or black post center mass on a target at 300 meters.

4. Hold a horizontal stadia line center mass on a target at each of the ranges indicated beyond 300 meters.



TA31RCO-A4



TA31RCO-M855

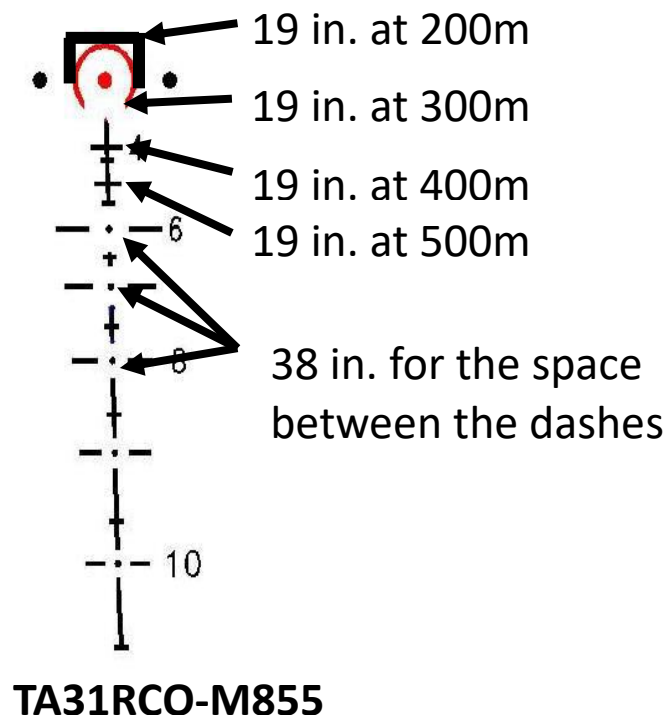
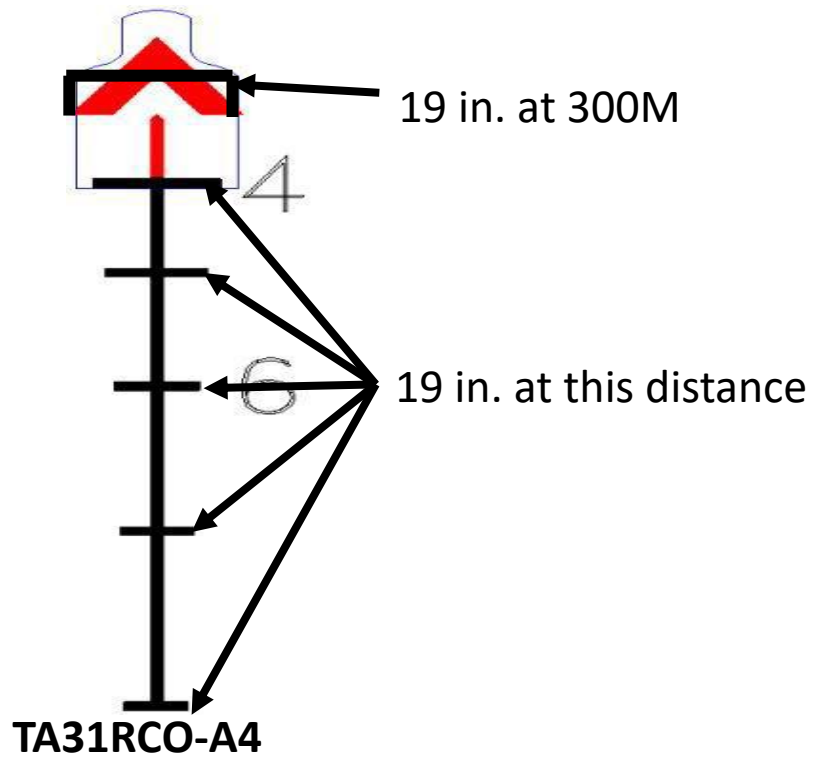
(2) Range Determination And Estimation. To engage targets in a combat environment, the Marine must determine the distance from the Marine's location to a known point. This is known as range estimation. The ability to determine range is a skill that must be developed if the Marine is to successfully engage targets at unknown distances. Precise range estimation;

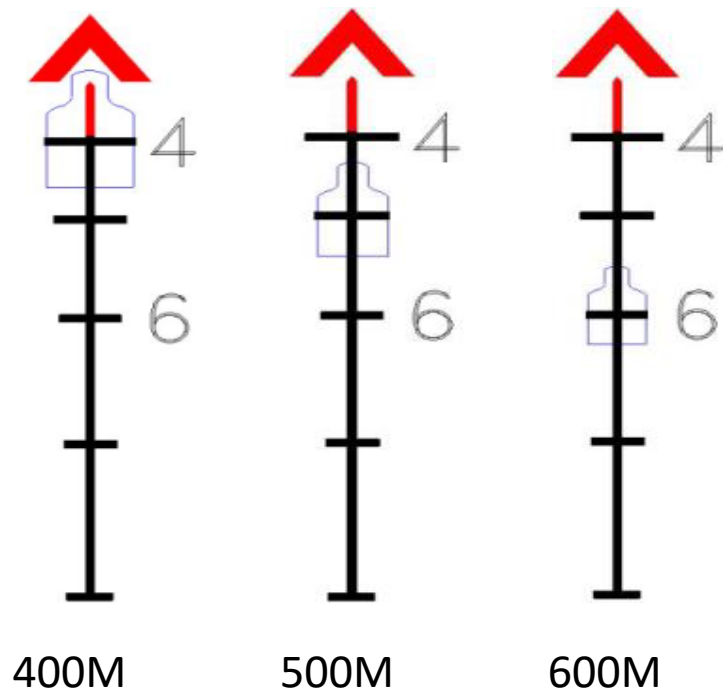
(a) Enhances accuracy.

(b) Enhances the chance of survival.

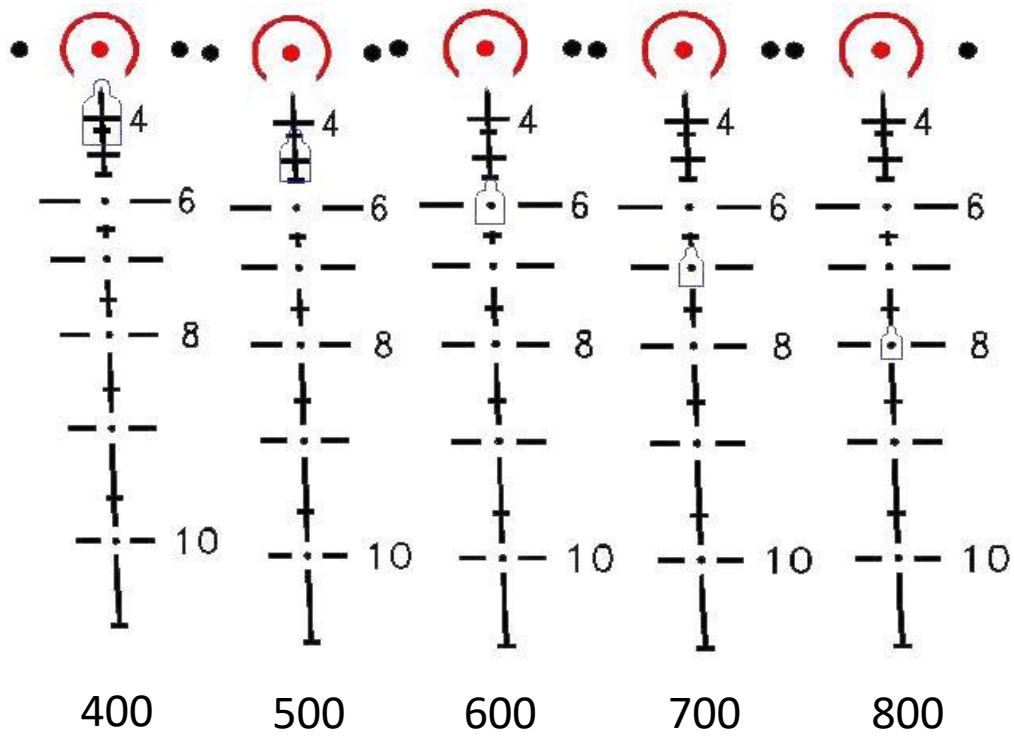
(c) Range Estimation Method using the Bullet Drop Compensator:

1. The RCO has a ranging feature that can be used to estimate range to a target. The base of the chevron and horizontal stadia lines represent 19 inches (i.e., the average width of a man's shoulders) at each of the indicated ranges. Range the target by placing the base of the chevron or a stadia line on the target to determine its range.





TA31RCO-A4



TA31RCO-M855

f. **Effects Of Weather.** All weather conditions have a physical and psychological effect on Marines. Through proper training, Marines can develop the confidence required to reduce the physical and psychological effects that are caused by weather. Wind, temperature, precipitation, and light can affect the trajectory of the bullet, so Marines must use techniques to offset these effects. To engage a target during combat, the Marine may be required to aim the Marine's Service Rifle at a point on the target other than center mass. This is known as offset aiming. Offset aiming involves adjusting sight picture to compensate for the distance and size of the target to account for wind conditions and range to the target or elevation.

(1) Temperature.

(a) In extreme heat, the Marine may experience rapid fatigue. Heat can cause muscle cramps, heat exhaustion, heat stroke, blurred vision, and reduced concentration levels that result in inaccurate shooting. During extreme heat;

1. Good physical condition and increased fluid intake can help to offset any adverse effects.

2. Sweat running into the eyes can cause irritation and make it difficult to see the sights.

3. Ground mirages can cause a target to appear indistinct and to drift from side to side. Heat waves or mirages may also distort the target shape.

4. To overcome the effects of heat and accurately engage a target, the Marine should maintain a center mass hold.

(b) Extreme cold can affect the Marine's ability to concentrate. If the Marine's hands are numb, the Marine will have difficulty holding a frigid Service Rifle and executing effective trigger control. Protecting the hands in a cold environment becomes a Marine's priority with the intention of effectively employ the Service Rifle.

(2) Wind. Marines can shoot effectively in windy conditions if they apply a few basic techniques and develop the proper mental attitude. The Marine can combat the wind in the following ways:

(a) Make subtle changes to the basic firing positions, such as increasing muscular tension, to reduce movement of the Service Rifle sights.

(b) Select a more stable firing position.

(c) Seek support to stabilize the Service Rifle.

(d) Hold the shot and apply the fundamentals during a lull in the wind.

(3) Physical Effects Of Wind On The Bullet.

(a) The weather condition that presents the greatest problem to shooting is the wind because it affects a bullet's trajectory. The effect of wind on the bullet as it travels down range is referred to as deflection. The wind deflects the bullet laterally in its flight to the target (see fig. 7-2).

(b) The bullet's exposure time to the wind determines the amount the bullet is deflected from its original trajectory. Deflection increases as the distance to the target increases.

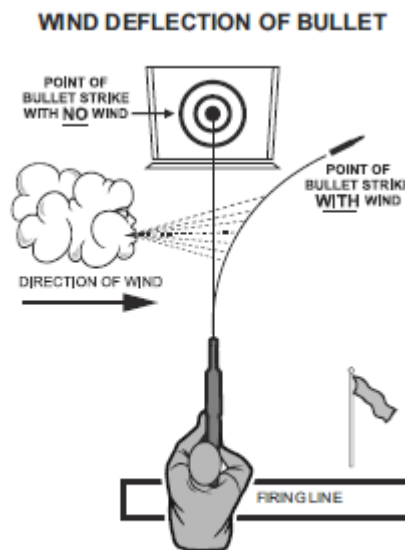


Figure 7-2. Deflection of a Bullet.

(4) Windage Adjustments For The Rifle Combat Optics.

(a) Offset Aiming.

1. The RCO should not be adjusted for a wind change. The windage turrets on the RCO should only be adjusted during zeroing. For wind corrections during firing, offset aiming is employed so that a hold into the direction of the wind will produce the desired result. A hold into the direction of the wind, based on wind speed, will enable accurate engagement of a target. Offset aiming must be used to compensate for the strike of the round when wind is a factor.

2. A hold for windage should be based on something that can be visually seen and estimated with some uniformity, such as the width of a body. For example, the width of a body is considered approximately 19 inches wide, half a body width is approximately 9.5 inches. Holds will vary based on the wind speed, range to the target, and the weapon system. The RCO reticle pattern centered on the edge of the target into the wind is a hold of approximately 9.5 inches, which is considered a hold of half a body width (see fig. 9-1).

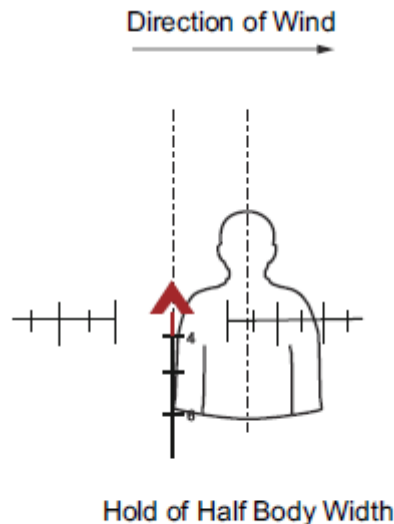


Figure 9-1. Rifle Combat Optic Holds for Wind.

(b) Guidelines For Applying Offset Aiming. The following general guidelines apply when using offset aiming to compensate for a **full value** wind:

1. For distances of 200 meters/yards, with light to medium winds (e.g., 5-15 mph), the aiming point is center mass. A hold is not required.

2. For distances of 300 meters/yards, with 10 mph winds, hold half a body width (i.e., on the edge of the target) into the wind.

3. For distances of 400 meters/yards, with light winds (e.g., 5 mph), hold half a body width on the edge of the target into the wind.

4. For distances of 400 meters/yards, with 10 mph winds, hold one body width into the wind.

5. For distances of 500 meters/yards, with light winds (e.g., 5 mph), hold one body width into the wind.

2. **SERVICE RIFLE FIRING POSITIONS.** (0300-RFL-1006)

a. **In A Combat Environment.** Marines must be prepared to engage the enemy under any circumstance. There are four basic firing positions: prone, sitting, kneeling, and standing. These positions provide a stable foundation for effective shooting. Any firing position must provide stability, mobility, and observation of the enemy. During training, the Marine learns positions in a step-by-step process, guided by a series of precise movements until the Marine assumes a correct position. The purpose of this process is to ensure that the Marine correctly applies all of the factors that will assist the Marine in holding the Service Rifle steady. The Marine will gradually become accustomed to the feel of the positions through practice and eventually will know instinctively if the Marine's position is correct. In combat, it may not be possible to assume a textbook firing position because of terrain, available cover, engagement time, dispersion of targets, and other limiting factors. Modifications to the basic positions may need to be made to adjust to the combat environment. The Marine must strive to assume a position that offers stability for firing, maximum cover and concealment from the enemy, and maximum observation of the target.

b. **Standing Position.** The standing position (also known as "Combat Stance") is the quickest position to assume and the easiest from which to maneuver. It allows for greater mobility than other positions;

(1) Is often used for immediate combat engagement.

(2) Is supported by the Marine's legs and feet, providing a small area of contact with the ground.

(3) Note: The body's center of gravity is high above the ground; therefore, maintaining balance is critical in this position.

(4) The standing position will be the default position for most initial and close-range engagements. Its primary benefits are mobility and observation. A properly built standing position will enable the Marine to rapidly and effectively engage multiple close-range targets, while permitting 360-degree movement.

(5) To assume the "Combat Stance," for quick, close engagement:

(a) Square your body to the target.

(b) Spread your feet apart to a comfortable distance with your support foot slightly in front of your firing foot. This distance may be wider than shoulder width.

(c) Distribute your weight evenly over both feet and hips and shift your balance forward slightly to reduce recovery time and increase the stability of your hold. Your legs should be bent slightly for balance.

(d) Grasp the pistol grip with your firing hand.

(e) With your support hand, grasp the rail system/fore grip/grip pod under the sling in a position that provides maximum bone support and stability of the weapon. If grasping the rail system, your support hand will be under them, with your thumb on the outboard side of them. The magazine must be on the inside of your support arm.

(f) Bring the Service Rifle sights up to eye level instead of lowering your head to the sights/optic and place your cheek firmly against the stock. Ensure that your head is erect

so that your aiming eye can look through the rear sight aperture/optic.

(g) Pull back on both your firing and support hands to place the service Rifle butt into your firing shoulder so that the sights are level with your eyes.

(h) Hold your firing elbow in a natural position.



Figure 6-33. Standing Position with Three-Point Sling.

c. **Stability Of Hold.** A firing position must provide a stable platform for accurate and consistent shooting. If the position is solid, the sight(s) can be held steady so sight picture can be achieved and the target accurately engaged. The purpose of a good firing position is to achieve stability of hold. The ability to hold the Service Rifle sight(s) still on a designated area of a target is considered stability of hold. Stability of hold is much more apparent when firing the RCO because the 4-power scope magnifies the movement of the reticle pattern on the target. When using the RCO to engage targets at longer distances, the magnification shows movement of the sight more because of stability of hold, which can slow down reaction time. Firing positions, sling adjustment, and the use of support affect stability of hold and the ability to achieve it. The firing position must be stable enough to hold the Service Rifle sight(s) on either a point or an area that is located on the target. Size and distance to the target dictate how critical stability of hold must be.

(1) **Smaller Target/Longer Range.** If the target is smaller and/or the range is longer, the target will require more stability of hold. As the range to the target increases, the

appearance of the target becomes smaller, making stability of hold much more critical to accurate target engagement. The greater the stability of hold, the less the movement of the sight(s) on the target. At longer ranges, the area on the target where the sight(s) are placed is smaller, because the target is further away. A more refined stability of hold is required to keep the sights from moving off of the target. The shooting process can be slowed down based on the time and distance to the target. As the range to the target increases, there is more time to engage the target and allow stability of hold to be refined for an accurate shot on target. At longer ranges, positions are established to gain stability of hold through the use of bone and artificial support. As time permits, a more stable position (i.e., kneeling or prone) is acquired, and the acquired position should be refined to increase stability of hold. A stable position is critical at longer ranges to acquire the stability of hold that is required to stabilize the sights on the target.

(2) Larger Target/Closer Range. The larger the target and/or the shorter the range, requires less stability of hold; however, the sight(s) must still be stabilized on the target. Stability of hold is not as critical in a close-range engagement as it is for a long-range engagement. Stability of hold allows placement of the Service Rifle sight(s) on a target. The greater the stability of hold, the less the movement of the sight(s) on the target. At close ranges, the area on the target where the sight(s) are placed is larger, because the target is closer. The sight's movement area on the target is acceptable as long as the sights do not move off the target. At close ranges there is room for greater movement of the sights on the target; therefore, not requiring as much stability of hold to be accurate. This allows for the quicker presentation and engagement that is required of a close-range target.

d. Using Support. Supports are foundations for positions and positions are foundations for the Service Rifle. To maximize the support that the position provides, the firing position should be adjusted to fit or conform to the shape of the cover. Elements of a sound firing position, such as balance and stability, must be incorporated and adjusted to fit the situation and type of cover. A supported firing position should, minimize exposure to the enemy, maximize the stability of the Service Rifle, and provide protection from enemy observation and fires. The Marine can use any available support (e.g., logs, rocks, sandbags, walls) to stabilize the Marine's

firing position. The surrounding combat environment dictates the type of support and position used.

e. **Adjusting The Firing Position.** The type of cover can dictate which firing position (i.e., prone, sitting, kneeling, or standing) will be the most effective. For example, the Marine's height in relation to the height of the cover aids in the selection of a firing position. The firing position selected should be adjusted to fit the type of cover to:

(1) Provide Stability. The firing position should be adjusted to stabilize the Service Rifle's sights and allow the management of recoil to recover on target.

(2) Permit Mobility. The firing position should be adjusted to permit lateral engagement of dispersed targets and movement to other cover.

(3) Allow Observation Aim. The firing position should be located to allow observation of the area/enemy while minimizing exposure to the enemy.

(a) Note: The firing position should be adjusted to fit the type of cover by adjusting the support hand, pocket of shoulder, firing elbow, stock weld, and/or grip of the firing hand in support of the Service Rifle or shooting position.

(4) Keep The Entire Body Behind Cover. The Marine should minimize exposure of any part of the Marine's body to fire and be aware of any body part that may extend beyond the cover (e.g., the head, firing elbow, knees).

(5) Shoot From The Right Or Left Side Of Cover. To minimize exposure and maximize the cover's protection, if possible, a right-handed Marine should shoot from the right side of cover, and a left-handed Marine should shoot from the left side (see fig. 6-36). However, if a right-handed Marine must fire from the left side of cover, the Marine shoots right-handed, but adjusts the Marine's position behind cover (see fig. 6-37).



Figure 6-36. Firing from Right Side of Cover.



Figure 6-37. Firing from Left Side of Cover.

f. **Firing Over The Top Of Cover.** Firing over the top of cover provides a wider field of view and lateral movement. When firing over the top of cover, the position can be supported and stabilized by resting the rail system or the support forearm on the cover (see fig. 6-38). The Marine should keep as low a profile as possible and the Service Rifle should be as close to the top of cover as possible.



Figure 6-38. Firing Over the Top of Cover.

(1) **Maintaining Muzzle Awareness.** When firing over the top of cover, the Marine must remember that the sights are higher than the barrel and remain aware of the location of the

muzzle of the Service Rifle. The iron sight/RCO optic line of sight is approximately 3 inches above the line of fire from the muzzle of the weapon. This differential must be considered because while a clear line of sight through the RCO/sight to target is acquired, the muzzle of the weapon may not be above any obstructions; such as the cover, intervening objects (e.g., turret shield, vehicle part), or micro-terrain directly in front of the Service Rifle. Therefore, the Marine must maintain a position that ensures the muzzle is high enough to clear the cover (e.g., window sill, top of wall) as the Marine obtains sight picture on the target (see fig. 6-39).



Figure 6-39. Clearing Cover with the Muzzle.

(2) Clearing the Ejection Port. Ensure the cover does not obstruct the ejection port. If the ejection port is blocked, the obstruction can interfere with the ejection of the spent cartridge case and cause a stoppage.

g. Resting The Magazine On Support. The bottom, front, or side of the Service Rifle magazine can rest on or against support to provide additional stability (see fig. 6-40 and fig. 6-41).



Figure 6-40. Magazine on Support.



Figure 6-41. Front of Magazine Against Support.

(1) CAUTION. The back of the magazine should not be pulled back against support because it can cause a stoppage by not allowing a round to feed from the magazine.

h. **Using The Support Hand For Stability On Cover.** The support hand should be used to help stabilize both the firing position and the Service Rifle to enable the Marine to maintain sight alignment and sight picture.

(1) The forearm or support hand can contact the support to stabilize the weapon (see fig. 6-42).



Figure 6-42. Forearm Resting on Cover.

(2) The Service Rifle rail system can rest on the support, **but the barrel cannot** (see fig. 6-43).



Figure 6-43. Rail System Resting on Cover.

(3) Placement of the support hand on the rail system may need to be adjusted forward or backward to accommodate the cover and the additional support provided by the Service Rifle resting on the cover. If the rail system is resting on the cover, the support hand can pull down on the rail system to further stabilize the weapon.

(4) The body weight can be shifted forward to stabilize the position against cover.

i. **Using Support In The Prone Position.** If possible, the Marine should use support (i.e., cover and concealment) from a prone position when firing from behind cover. This position is the steadiest and provides the lowest silhouette and maximum

protection from enemy fire. Support this position by placing the rail system/fore grip/grip pod, the forearm, or the magazine on or against support (see fig. 6-15).



Figure 6-15. Prone Position Using Support.

j. **Support In The Kneeling Position.** As time and the combat situation permit, the Marine should seek cover and use support to assist stabilizing the Service Rifle's sight(s). When the prone position cannot be used because of the height of the support, the kneeling position may be appropriate. The kneeling position:

(1) Provides additional mobility over the prone position.

(2) Allows shooting from all sides and from cover of varying sizes.

(3) This position can be altered to maximize the use of cover or support by assuming a variation of the kneeling position (i.e., high, medium, or low).

(4) In the kneeling position, the Marine must not telegraph (i.e., broadcast) the Marine's position behind the cover with the Marine's knee. When shooting around the sides of cover, the Marine should strive to keep the Marine's firing knee in line with the Marine's support foot so that the Marine does not reveal the Marine's position to the enemy.

(5) Support the position by placing the rail system/fore grip/grip pod, the forearm, or the magazine on or against

support. In addition, the position (e.g., a knee, the side of the body) can rest against support (see fig. 6-31).

(6) If the Service Rifle is resting on support, the Marine may not need to stabilize the weapon by placing the Marine's support elbow on the Marine's knee (see fig. 6-32).



Figure 6-31. Kneeling Position Using Support.



Figure 6-32. Kneeling Position with Service Rifle on Support.

k. **Support In The Standing Position.** As time and the combat situation permit, the Marine should seek cover and use support to assist stabilizing the Service Rifle's sight(s). The standing position can be adapted to cover, while still providing greater mobility and observation of the enemy than other positions. The standing position can effectively be used either behind high cover (e.g., window, over a wall) or narrow cover (e.g., tree, telephone pole).

(1) To use artificial support from the standing position, the Marine will lean the Marine's body forward or against support to stabilize the weapon and the position. The Marine will support the position by placing the rail system/fore grip/grip pod, the Marine's forearm, or the magazine on or against support.

(2) The position (e.g., the side of the body) can also rest against support (see fig. 6-35).



Figure 6-35. Standing Position Using Support.

3. TARGET ENGAGEMENT. (0300-RFL-1006b)

a. **Engagement.** The fundamentals of marksmanship are aiming and trigger control. During combat, the fundamentals of marksmanship must be applied in a timeframe consistent with both the size and distance of the adversary. At longer ranges, the adversary appears to be smaller and a more precise shot is required to accurately engage the adversary. As the range to the target increases, the fundamentals are more critical to accurate engagement. To be accurate at longer ranges, the Marine must take the time to slow down and accurately apply the fundamentals. At shorter ranges, the enemy must be engaged quickly before the Marine can engage the Marine. As the size of the target increases and the distance to the target decreases, the fundamentals, while still necessary, become less critical to accuracy.

(1) **Engagement Techniques.** In a combat environment, targets can present themselves with little or no warning. Close-range engagements do not allow for, nor require, refined aiming techniques used in long-range precision engagements. Therefore a greater emphasis is placed on rapid presentation of the weapon. Controlled tension of major muscle groups is needed to present, stabilize, and manage recoil of the weapon.

Presentation results in the sights being automatically aligned as soon as stock weld is achieved. To maintain an advantage, the Marine carries the Marine's weapon in a position that permits the Service Rifle to be both easily carried and presented as quickly as possible.

(a) Close-Range Engagements. At close ranges, trigger control should be applied quickly and instantly the moment that sight picture is achieved. Trigger control is applied as sight picture is being acquired.

(b) Mid-to-Long-Range Engagements. In mid to long-range engagements, trigger control is more critical to ensure accuracy. At longer ranges, if the trigger is moved so that sight picture is disturbed, there is a greater chance of missing the target. The longer the range, the more amplified any error in sight picture becomes. The trigger must be manipulated directly to the rear without disturbing sight picture.

(c) From The Alert Or Ready Carry. To present the Service Rifle from the alert, perform the following steps once a target appears;

1. Assume a "Combat Stance," while looking at the target, bring the muzzle up by raising your support hand, allowing the Service Rifle buttstock to pivot in your shoulder. At the same time, pull the Service Rifle firmly into the pocket of your shoulder.

2. As the Service Rifle is being presented, take the Service Rifle off SAFE and place your trigger finger on the trigger and inhale, filling the lungs with air.

3. As the stock makes contact with your cheek, level the Service Rifle to obtain a proper stock weld. Do not move your head down to meet the Service Rifle stock.

a. Note: If the Service Rifle is in the shoulder properly, the aiming eye will be able to look through the optic/rear sight as soon as the stock makes contact with the cheek.

4. As the sight(s) becomes level with the aiming eye, visually locate the target through the optic/rear sight aperture and obtain sight picture.

(2) Multiple Target Engagement Techniques. When engaging multiple targets, the Marine must prioritize each target and carefully plan the Marine's shots to ensure successful target engagement. Mental preparedness and the ability to make split-second decisions are the keys to a successful engagement of multiple targets. The proper mindset will allow the Marine to react instinctively and control the pace of the battle, rather than reacting to the adversary threat.

(a) Threat Assessment And Prioritization.

1. By observing an adversary, the Marine can determine whether or not it presents a threat according to the rules of engagement. Normally, the combat situation will dictate the order of multiple target engagement. Target priority is based on various factors (e.g., *proximity, level of threat, opportunity*), but no two situations will be the same. The level of threat for each target should be determined—from most to least threatening—so that they will be engaged in succession. The target that poses the greatest threat should be engaged first, but prioritizing targets is an ongoing process. Changes in threat level, proximity, or the target itself, can cause the Marine to revise the Marine's priorities. Therefore, the Marine must remain alert to changes in a target's threat level, proximity, and any other target opportunities as the battle progresses.

2. After the first target is engaged, the Marine must immediately engage the next target and continue to engage targets until they are eliminated. While engaging multiple targets, the Marine must;

a. Be aware of the Marine's surroundings and not fixate on just one target.

b. Prioritize the targets rapidly, establish an engagement sequence, and engage the targets.

c. Maintain constant awareness and continuously search the terrain for additional targets.

(3) Post-Engagement Technique: Search And Assess. After the Marine engages a target, the Marine must immediately search the area and assess the results of the Marine's engagement. Searching and assessing enables the Marine to avoid tunnel vision that can restrict the focus so that an indication

of other targets may be overlooked. The Marine searches the area for additional targets or cover and then assesses the situation to determine if the Marine needs to; Reengage a target, engage a new target, take cover, assume a more stable position, or cease engagement.

(a) Technique for Search and Assess. To search and assess, the Marine performs the following steps:

1. Keeps the buttstock in the shoulder and lowers the muzzle of the Service Rifle slightly to look over the sights.

2. Places the trigger finger straight along the receiver.

3. Searches the area and assesses the situation/target by moving the Marine's head and eyes. It is not necessary to move the Service Rifle with the head and eyes. Keep both eyes open to increase the field of view.

4. Determines that the area is clear of enemy threat, places the Service Rifle on SAFE, cants the weapon, and observes the chamber area to ensure that the bolt is forward.

5. Determines that the fight is over. Once this determination is made, the Marine conducts a chamber check, drops the magazine to observe if adequate rounds are present, and conducts a tactical reload as necessary.

b. **Shot Delivery Techniques.** The Marine must maintain the ability to react instinctively in a combat environment—day or night. However, speed alone does not equate to effective target engagement. The Marine must fire only as fast as the Marine can fire accurately. The Marine should never exceed the Marine's physical capability to engage a target effectively. Shot delivery techniques are employed to produce accurate shots on target based on the size and distance to the target. Shot delivery techniques include two shots and failure to stop.

(1) Two Shots. In combat, it may not always be possible to eliminate a target in a single engagement, regardless of how well the fundamentals are applied, because two shots may not cause enough trauma to the body to eliminate the target. Two aimed shots fired in rapid succession to the target increases the amount of trauma (i.e., shock, blood loss) and increases the chance of incapacitation of the target. There are two methods

to execute the two-shot technique; the controlled pair and the hammer pair.

(a) Controlled Pair.

1. Is two aimed shots fired upon a target in rapid succession, sight picture is acquired for both shots.

2. Is an immediate target engagement technique for targets at ranges where sight picture is critical to accuracy, but distance will vary based on the individual Marine's ability.

3. The size and distance to the target will affect how quickly two shots can be delivered on the target. The intent is to fire two shots quickly so that the second shot is fired before the target can react to the first shot. The speed at which two shots are fired depends on the ability of the Marine and how fast the Marine can reacquire the Marine's front sight. The speed of reacquiring sights will depend on how well recoil is managed. The better the Marine manages recoil, the faster the second shot will break. The Marine must not compromise accuracy for speed. The key to successful target engagement is to fire only as quickly as the Marine can fire effectively.

4. Controlled pair is the preferred technique of delivering two rapidly fired shots at ranges of greater than 15 yards. To employ a controlled pair, perform the following:

a. Present the weapon to the target.

b. Acquire sight picture, fire a shot, and recover the sights back on target.

c. Reestablish sight picture and fire a second shot in rapid succession to the first.

(b) Hammer Pair.

1. Is two shots fired in rapid succession with just one sight picture.

2. Is fired at close ranges where sight picture is not as critical to accuracy and the distance will vary based on the individual Marine's ability.

3. To fire a hammer pair, present the weapon to the target. Once you have a sight picture on center mass of the target, fire two rapid shots without regaining sight picture. The Marine must trust the Marine's firing position and recoil management to fire the second round without reacquiring the Marine's sights. Proper body position and practice should enable the Marine to fire as fast as the trigger can be manipulated.



(2) Failure To Stop.

(a) A pair fired to the torso, followed by an additional shot to an alternate aiming point (i.e., T-box in head or pelvic girdle). Time and distance to the target will determine if the initial pair is delivered via a controlled pair or a hammer pair.

1. An assessment of the target following an engagement where the target is not incapacitated, followed by a single shot fired to an alternate aiming area. Assessing the situation following two shots enables the Marine to break out of the tunnel vision often associated with firing in combat, enabling the Marine to determine follow-on action.

2. A pair fired to the torso where the target still poses a threat.

3. A pair fired when the torso shots have failed to stop or eliminate the target. There may be numerous reasons why body shots may not have been successful (e.g., body armor, psychological or physiological reactions to a violent encounter, ballistic failure, drugs).

(b) T-Box.

1. A shot in the T-box of the head is considered an incapacitating shot. The T-box is the primary alternate aiming point, because one shot to the brain has the best chance of immediately incapacitating an adversary. A frontal shot should be placed within the T-box, which is located from the brow to the bottom of the nose and from eye to eye (see fig. 10-1). A T-box shot easily penetrates the head with minimal deflection or energy loss.

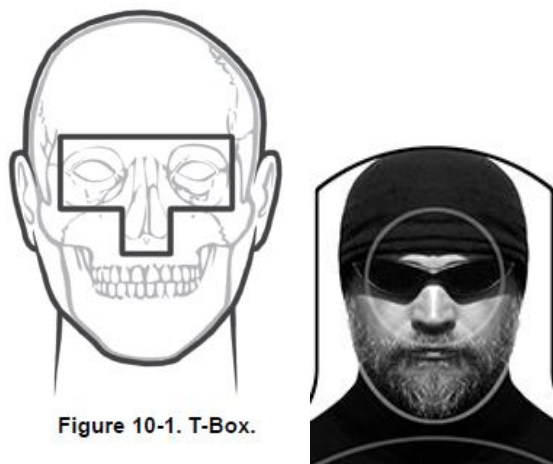
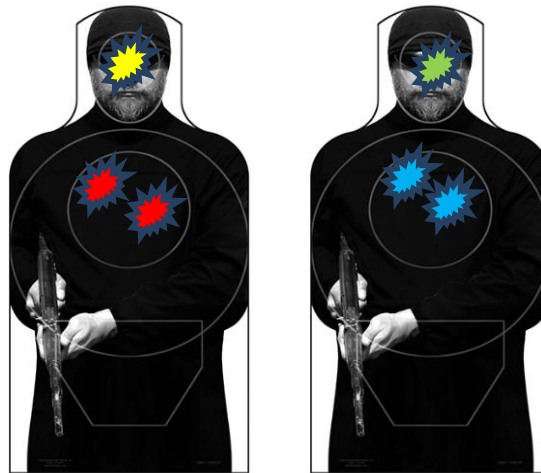


Figure 10-1. T-Box.

2. A well-placed shot in the chest will cause the loss of massive amounts of blood very rapidly. A secondary aiming point is in the T-box of the head, which is located from the brow to the bottom of the nose and from eye to eye. Placing a round in the T-box of the head will increase the chances of incapacitating the adversary. While a T-box shot will be more likely to produce immediate incapacitation, it presents a smaller target than the chest and is a more difficult shot to make.

(c) Pelvic Girdle. A shot to the pelvic girdle is an immobilizing shot, which means that the target will go down, but not necessarily be eliminated. The pelvic girdle should only be used if there is no possible chance of engaging the T-box.

1. Technique. To perform a failure to stop—
 - a. Fire two shots rapidly on a target.
 - b. Assess the situation.
 - c. Slow down and acquire sight picture on the alternate aiming area if the target has not been eliminated.
 - d. Fire one single precision shot on the alternate aiming area.
 - e. Search and assess.



Adversary #1

Adversary #2

(2) Box Drill. If two shots to the torso fail to eliminate one or both of the adversaries, employ a box drill (see fig. 12-1) as follows:

(a) Engage the first adversary with a pair of shots to the torso. Then, while utilizing the recoil of the second shot, guide the weapon over to the next target and fire a pair of shots to that torso.

(b) Follow through immediately, up to the same target's head, using the recoil of the last shot to move the weapon. Pause to get a clear sight picture, and fire an incapacitating shot to the head.

(c) Again, using the recoil of the last shot, guide back over to the first target's head, aim in, and fire an incapacitating shot.

1. Note: This last shot is the completion of a failure to stop drill, because you would not need to fire the last shot if your first pair to the torso had incapacitated the first target. The reason the second target is engaged with the box drill is to ensure that it will not be able to engage you while you are transitioning back to the target.

(d) After firing the final shot on the first target, follow through and assess the situation for further action.

(3) Forward Movement. Forward movement is movement in a direction directly toward the adversary. During forward movement:

(a) Place your feet heel to toe and drop your center mass by consciously bending the knees. This will make your thighs act as shock absorbers and steady your movement to maintain the stability of your upper body, stabilizing the Service Rifle sight(s) on the target. Movement should always be smooth and steady. Bend forward at your waist to put as much mass as possible behind your weapon for recoil management. Roll your foot heel to toe as you place your foot on the deck and lift it up again to provide for the smoothest motion possible.

1. Note: The feet should almost fall in line during movement. This straight-line movement will keep the sights from bouncing excessively and allow a good stationary stance when needed.

(b) Keep your weapon at the ready carry. Do not aim in on the target until you are ready to engage. You should maintain awareness of your surroundings, both to your left and right, at all times during movement.

1. Note: If the Marine is moving already aimed in, the Marine will not be aware of the Marine's surroundings. Most importantly, the Marine will not be constantly aware of the positions of friendly forces and/or other adversaries.

(c) "Combat Gliding" Technique.

1. An aggressive stance must be maintained throughout the entire movement and the following should be observed.

2. Keep the muzzle of the weapon facing down range at the ready carry, toward the adversary.

3. When moving, the placement of your feet should be heel to toe measuring approximately 12 to 15 inches using a combat glide. You must not overstep or cross your feet, because this can cause you to become off balance or fall.

4. Keep your hips as stationary as possible. Use your upper body as a turret, twisting at your waist, maintaining proper platform with your upper body.

c. **Reloading The Service Rifle.** When performing a reload, the first priority is to reload the Service Rifle and get it back into action. The second priority is to retain the magazine so that when you move, the magazine moves with you. When time permits, retain magazines securely on your person (e.g., cargo pocket, load-bearing vest). The combat situation may dictate dropping the magazine to the deck when performing a speed reload. This is acceptable as long as the magazine is picked up before moving on to another location and if the tactical situation permits. The dropped magazine should not be dirty or damaged, since these conditions could cause a stoppage.

(1) **Tactical Reload.** A tactical reload occurs when the magazine is replaced before it runs out of ammunition, there is a lull in the action, and when the weapon is in Condition 1.

(2) **Speed Reload.** A speed reload is required when the magazine in the weapon has been emptied and the bolt has locked to the rear. It is conducted as quickly as possible.

d. **Corrective Action.** If the Service Rifle fails to fire, corrective action should be performed by the Marine. Corrective action is the process of investigating the cause of the stoppage, clearing the stoppage, and returning the weapon to proper operating status. Once the Service Rifle ceases firing, the Marine must physically or visually observe the ejection port to identify the problem before the Marine can clear it. The steps taken to clear the weapon are based on observation of one of the indicators discussed in the following subparagraphs:

(1) **Bolt Is Forward Or Ejection Port Cover Is closed.**

(a) The Marine will depress the trigger and hear a click and feel the hammer fall without a shot being fired (see figs. 4-11 and 4-12).



Figure 4-11. Bolt Forward.



Figure 4-12. Ejection Port Cover Closed.

(b) To return the weapon to proper operating status, first seek cover if the tactical situation permits, and then:

1. Tap (tap the bottom of the magazine).
2. Rack (pull the charging handle to the rear and release it).
3. Bang (sight in and attempt to fire).

(2) Bolt Is Locked To The Rear.

(a) Although a dry weapon is not considered a true stoppage or mechanical failure, the Marine must take action to return the weapon to operation. If the Marine observes that the bolt is locked to the rear (see fig. 4-13), the weapon has run

dry, and the Marine will perform the following steps to return the weapon to normal operation:



Figure 4-13. Bolt Locked to the Rear.

1. Conduct a speed reload.
2. Sight in and attempt to fire.

(3) Visible Obstruction.

(a) A visual obstruction (see fig. 4-14) usually indicates a failure to eject or a double feed. This occurs when a round and a piece of brass become stuck in the chamber or two rounds become stuck in the chamber. The Marine will attempt to depress the trigger and will feel a mushy trigger or the Marine can feel the weapon fail to completely cycle. To return the weapon to operation:



Figure 4-14. Visible Obstruction.

1. Seek cover if the tactical situation permits.

2. Pull the charging hand and attempt to lock it to the rear.

3. Hold the charging handle to the rear, rotate the Service Rifle so that the ejection port is facing down, and shake the Service Rifle to free the brass/round. Maintain pressure to keep the charging handle to the rear.

4. Attempt to remove the magazine if the brass/round does not shake free. Maintain pressure to keep the charging handle to the rear and hold it. Strike the butt of the Service Rifle on the ground or manually clear the brass/round. Note: The stock on the M4 must be fully collapsed before striking the butt on the deck.

5. Conduct a reload.

6. Sight in and attempt to fire.

(3) Brass Is Stuck Above The Bolt.

(a) When brass is stuck above the bolt (see fig. 4-15), the Marine will perform the following steps to clear and return the weapon to operation:



Figure 4-15. Brass Above Bolt.

1. Seek cover if the tactical situation permits.

2. Attempt to place the weapon on SAFE.
3. Remove the magazine.
4. Pull the charging handle to the rear until resistance is met and hold it.
5. Rotate the Service Rifle so that the ejection port is facing you.
6. Push the bolt face back with a sturdy object (e.g., stripper clip, knife, multi-purpose tool).
7. Rotate the muzzle down, and observe the brass clearing the chamber.
8. Perform a reload.
9. Sight in and attempt to fire.

(3) Audible Pop, Reduced Recoil, Or Black Smoke.

(a) An audible pop occurs when only a portion of the propellant is ignited. It is normally identifiable by reduced recoil and is sometime accompanied by excessive black smoke escaping from the chamber area. To clear the Service Rifle in a combat environment;

1. Place the Service Rifle in Condition 4.
2. Move the take-down pin from left to right as far as it will go to allow the lower receiver to pivot.
3. Remove the bolt-carrier group.
4. Inspect the bore for obstruction from the chamber end.
5. Insert a cleaning rod into the bore from the least blocked end to clear the obstruction, pushing in the direction that requires the least amount of travel. This may require striking the cleaning rod with a hard object to push the projectile through the barrel.
6. Reassemble the Service Rifle.
7. Conduct a reload.

8. Sight in and attempt to fire.

c. **Low-Light Engagement Techniques.** Combat targets are frequently engaged during periods of darkness or under low-light conditions. Although basic marksmanship fundamentals do not change, the principles of night vision must be applied and target detection is applied differently. In addition, during periods of darkness or low light, the Marine's vision is extremely limited.

(1) Acquiring Targets At Night.

(a) Hold your head high so that your eyes are well above your weapons sights. This will increase your field of view and improve the sharpness of detail.

(b) Keep both eyes open to get maximum visual coverage of the target area and improve depth perception.

(2) Night Aiming Device: AN/PEQ-15.

(a) The AN/PEQ-15 advanced target pointer illuminator aiming light is a multifunction laser device that emits visible or infrared (IR) light for precise weapon aiming and target/area illumination.

(b) The IR aim and illumination lasers provide the ability for active, covert target acquisition in low light or complete darkness when used in conjunction with night vision devices.

(3) Infrared Aiming Laser. The IR aiming laser is used with night vision devices to provide a precision aim point or to mark targets. When employing the aiming device;

(a) The night vision should remain on.

(b) The laser mode selector should be turned to the appropriate setting.

(c) The Marine should be ready to activate the laser when needed.

(d) Note: Activate the laser when presenting the weapon to a target. Activating the laser prematurely or excessively can result in the Marine's position being detected by the enemy. Activate the illuminator to check for targets or scan the area.

PERFORMANCE EXAMINATION CHECKLIST

0300-RFL-1006

Given a service rifle/Infantry Automatic Rifle (IAR), with primary aiming device, fighting load, sling, magazines, ammunition, and threat targets between 26 and 500 meters, engage mid to long range threats (day) to eliminate 60% of exposed threats, during execution of Combat Marksmanship Table 3.

Student Instructions:

1. You are a Marine and must engage mid to long-range threats (day).
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and engage mid to long-range threats (day) to eliminate 60% of exposed threats, during execution of Combat Marksmanship Table 3.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Identify threat(s).			
a. Search and assess.			
2. Prioritize threat(s).			
3. Present the weapon to the target while assuming supported combat shooting positions: standing, kneeling, and prone.			
4. Determine the range to the threat.			
5. Compensate for the effects of weather.			
6. Apply appropriate hold.			
7. Apply engagement techniques (controlled pair, precision engagement).			
8. Search and assess.			
9. Maintain the weapon in Condition 1.			

0300-RFL-1008

Given a service rifle/Infantry Automatic Rifle (IAR), with primary aiming device, Mini-Integrated Pointer Illuminator Module (MIPIM), night vision device, fighting load, magazines, ammunition, and threat targets between 26 and 200 meters, engage mid-range threats (night) to eliminate 50% of exposed threats during execution of Combat Marksmanship Table 4.

Student Instructions:

1. You are a Marine and must engage mid-range threats (night).
2. There are time limits for the stages of this task as prescribed in MCO 3574.2_.
3. To achieve mastery, you must complete the performance checklist and eliminate 50% of exposed threats during execution of Combat Marksmanship Table 4.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Identify threat(s).			
a. Search and assess.			
2. Prioritize threat(s).			
a. Engage targets based on target precedence.			
3. Present the weapon to the threat while assuming supported, combat shooting positions: standing, kneeling, and prone.			
a. Execute tactical weapon carries.			
4. Aim the weapon using the IR Aim Laser and night vision device.			
5. Apply engagement techniques (controlled pair, precision engagement).			
6. Search and assess.			
a. Engage a new target.			
b. Re-engage a target.			
7. Maintain the weapon in Condition 1.			

0300-RFL-1009

Given a service rifle/Infantry Automatic Rifle (IAR) with primary aiming device, fighting load, sling, magazines, ammunition, and threat targets from 5 to 25 meters, engage Short Range Threats (Day) to eliminate 80% of exposed threats during execution of Combat Marksmanship Table 5.

Student Instructions:

1. You are a Marine and must engage Short Range Threats (Day).
2. There are time limits for the stages of this event as prescribed in MCO 3574.2_.
3. To achieve mastery, you must complete the performance checklist and eliminate 80% of exposed threats during execution of Combat Marksmanship Table 5.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Identify threat(s).			
2. Prioritize threat(s).			
3. Present the weapon to the threat while assuming combat stance.			
4. Execute drills as required by Table 5.			
5. Search and assess.			
6. Maintain the weapon in Condition 1.			

0300-RFL-1010

Given a service rifle/Infantry Automatic Rifle (IAR), with primary aiming device, Mini-Integrated Pointer Illuminator Module (MIPIM), night vision device, fighting load, magazines, ammunition, and threat targets between 5 and 25 meters, engage Short Range Threats (Night) to eliminate 50% of exposed threats during execution of Combat Marksmanship Table 6.

Student Instructions:

1. You are a Marine and must engage Short Range Threats (Night).
2. There are time limits for the stages of this event as prescribed in MCO 3574.2_.

3. To achieve mastery, you must complete the performance checklist and eliminate 50% of exposed threats during execution of Combat Marksmanship Table 6.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Identify threat(s).			
2. Prioritize threat(s).			
3. Present the weapon to the threat while assuming combat stance.			
4. Aim the weapon using the IR Aim Laser and night vision device.			
5. Execute drills as required by Table 6.			
6. Search and assess.			
7. Maintain the weapon in Condition 1.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>CHAPTER/PAGE</u>
MCO 3574.2_	Marine Corps Combat Marksmanship Program	Entire Order
MCRP 8-10B.2	Rifle Marksmanship	4-10, 6-24, 12-1, and 15-9 through 15-12

NOTES :

STUDENT OUTLINE

PREPARE FOR COMBAT

MCT0401

06/27/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given an order with a mission to conduct combat operations, while wearing a fighting load, prepare for combat to ensure the individual is prepared to accomplish the mission. (0300-PAT-1004)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify the phases of offensive combat in accordance with MCRP 3-10A.3. (0300-PAT-1004a).

(2) Given a list of choices, identify the parts of a warning order in accordance with MCRP 3-30.7. (0300-PAT-1004b)

(3) Given a list of choices, identify the components of a five paragraph order in accordance with MCTP 3-01A. (0300-PAT-1004c).

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to provide you with the skills necessary to understand and prepare for a mission. During this class we will discuss: Phases of Offensive Combat, Warning Order, 5 Paragraph Order, Pre-Combat Checks, and Pre-Combat Inspections. This class will tie-in with the training evolutions that you will be conducting at Marine Combat Training as you get ready for the training evolutions and squad/platoon missions. This lesson also ties in with the Patrolling, Offense, and Defensive Fundamentals training you will receive here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. PHASES OF OFFENSIVE COMBAT. (0300-PAT-1004a)

a. There are three phases to offensive combat they are preparation, conduct, and exploitation phase.

b. **Preparation.** The preparation phase begins with the receipt of the warning order. It ends when the lead element crosses the line of departure or when contact is made with the enemy-whichever comes first. It is usually accomplished in three steps: movement to the assembly area, final preparations and rehearsals in the assembly area, and movement to the line of departure.

c. **Conduct.** The conduct phase of offensive combat begins when the squad is forced to fire on the enemy in order to advance or the leading troops cross the line of departure.

d. **Exploitation.** Exploitation normally occurs after a successful assault and seizure of the objective. It begins immediately after or in conjunction with the consolidation and reorganization phase. It is a continuation of the attack aimed at destroying the enemy's ability to conduct an orderly withdrawal or organize a defense. Pursuit by fire and/or continuation of the attack are methods used to exploit success.

(1) **Pursuit By Fire.** When the assault through the assigned objective is completed, the squad fires upon the withdrawing enemy forces until they are no longer visible or are beyond effective range.

(2) **Continuation of the Attack.** The purpose of continuing the attack is to maintain pressure on the retreating enemy and destroy his combat power. When ordered, the rifle squad continues the attack. The squad leader repeats all the steps performed for previous attacks. Frequently, the urgent need of a higher command to maintain momentum requires that these steps be done rapidly so that the attack can be continued with minimum delay.

2. **WARNING ORDER.** (0300-PAT-1004b)

a. The warning order is a preliminary notice of an order or action which is to follow from the patrol leader. The warning order will get posted in the unit area like a fire watch roster; everyone is responsible for reading it. It alerts subordinates to possible requirements and affords them the opportunity for concurrent planning. The warning order includes:

b. **Situation.** The situation paragraph contains information on the overall status and disposition of both friendly and enemy forces as well as attachments and detachments.

c. **Mission.** The mission statement is a clear and concise statement of what the unit is to accomplish. It expresses the unit's primary task and purpose by addressing the "who, what, where, when, and why" for the mission assigned.

d. **General Instructions.**

(1) **General And Special Organization.** General tasks are assigned to units and teams. Specific details of tasks are given in the patrol leader's order. This is where you will find out what your duties are while on the patrol. Every member of the patrol must know his responsibilities, the responsibilities of the other patrol members, and where they are to be done.

(2) **Uniform And Equipment Common To All.** The patrol leader specifies camouflage measures to be taken, the identification to be carried and where it will be carried.

(3) **Weapons, Ammunition, And Equipment.** These items are assigned to units and teams. Subordinate leaders make further assignments to teams and individuals.

(4) **Chain Of Command.** A chain of command is established when the patrol includes personnel from outside the squad.

(5) **Time Schedule.** The patrol leader (PL) addresses all events from now until the patrol departs. The PL also designates the place and uniform for receiving the patrol order, conducting inspections, and conducting rehearsals.

e. **Specific Instructions.**

(1) To Subordinate Leaders. The patrol leader gives out all information concerning the drawing of ammunition, equipment, ordnance, water, and rations. The PL identifies the personnel that will accompany him on reconnaissance and gives guidance on any special preparation necessary for the conduct of the mission.

(2) Special Purpose Teams And Key Individuals. The patrol leader should address requirements of designated personnel or teams, such as having point men, pacers, and navigators make a thorough map study and check their equipment. Ensure EPW teams have detainee tags, and rope/flex-cuffs. All special purpose teams should be reminded to check the equipment that they must bring.

3. **5 PARAGRAPH ORDER (PATROL ORDER).** (0300-PAT-1004c)

A patrol order follows a warning order. Any of the subjects that have been addressed in the warning order may be omitted with the exception of the mission statement. The patrol order is a detailed description of how units and individuals will accomplish the patrol's mission. All patrol members should be present for the patrol order and take detailed notes to ensure everyone understands their responsibilities. It is usually given over a terrain model or some visual representation of the ground the patrol will be covering.

a. **Orientation.** This brief precedes the 5 paragraph order and orients the members of a patrol to their current location and other key locations within the area of operations. It analyzes how terrain, weather, sun and moon data, visibility, Chemical, Biological, Radiological, and Nuclear (CBRN) considerations, and the civilian population situation affect both the enemy and friendly efforts throughout the battlespace.

b. **Situation.** This is a commander's estimate of the enemy and friendly situations. The commander utilizes 3 acronyms to convey his estimate of the enemy situation: **SALUTE, DRAWD, EMPCOA.**

(1) SALUTE describes the enemy's composition, disposition, and strength. **S**ize, **A**ctivity, **L**ocation, **U**nit, **T**ime, and **E**quipment

(2) DRAWD describes the enemy's capabilities and limitations to **D**efend, **R**einforce, **A**ttack, **W**ithdraw, and **D**elay.

(3) The unit commander synthesizes these two estimations of the enemy situation and develops his appraisal or **E**nemy's **M**ost **P**robable **C**ourse **O**f **A**ction.

(4) The Friendly situation is a brief statement which identifies the higher unit's mission, the locations and missions of adjacent and supporting units, and any attachments or detachments to/from the unit. The commander uses the acronym HASA; **H**igher, **A**djacent, **S**upporting, and **A**ttachments/Detachments.

c. **Mission.** The mission statement is a tactical task to be accomplished and the purpose of the mission (who, what, when, where, and why). All members of the patrol must remember the mission and understand its purpose. The mission assigned to a patrol must be clear and oriented toward one objective with a specific task and purpose. More than one primary objective or indefinite missions invite confusion, casualties, and failure.

d. **Execution.** The execution paragraph contains the "how to" information needed to conduct the operation. It contains the following sub paragraphs:

(1) **Commander's Intent.** Explains the commander's assessment of the enemy's center of gravity and critical vulnerability as well as his end state desired.

(2) **Concept Of Operations.** The scheme of maneuver and fire support plan are detailed here. It outlines how the patrol is organized and moves to the objective area. What the patrol will do at the objective and how it will return from the objective. It will detailed how supporting fires to include illumination will be utilized.

(3) **Subordinate Element Missions.** Subordinate element missions (task and purpose) are assigned to elements, teams, and individuals, as required.

(4) **Coordinating Instructions.** This paragraph contains instructions common to two or more elements, coordinating

details, and control measures applicable to the patrol as a whole.

e. **Administration And Logistics**. This paragraph contains changes or additions to uniform, equipment, and prescribed leads from that given in the warning order. It also contains all the information pertaining to rations and ammunition; location of the distribution point, the location of corpsmen and aid stations; the handling of detainees; and other administrative and supply matters. We describe this by using the "FIVE Bs:"

- (1) Beans (food and water).
- (2) Bullets (ammunition).
- (3) Batteries (for communications).
- (4) Band-Aids (medical evacuation).
- (5) Bad Guys (detainee handling).

f. **Command And Signal**. This paragraph is broken into two sub-paragraphs.

(1) Command. Details the succession of command and location of key leaders in the patrol organization.

(2) Signal. Special instructions on communications, including prearranged signals, password and countersign, radio call signs and frequencies, emergency signals, radio procedures, pyrotechnics, and restrictions on the use of communications.

4. **PREPARE FOR COMBAT**. (0300-PAT-1004)

Following the receipt of the patrol order the leader supervises the unit's preparation for combat by conducting rehearsals and inspections.

a. **Pre-Combat Checks (PCC)**. The patrol leader inspects before rehearsals to ensure completeness and correctness of uniform and equipment. The following areas are checked: helmet, personal protection equipment, serviceability of uniform, dog tags, time hacks, Load Bearing Equipment and SAPI's, Individual First Aid Kit (IFAK), hydration source,

magazines, accessibility of ammunition in the prone, kneeling, and standing, weapon serviceability, Night Vision Device (NVD), Night Aiming Device (NAD), note taking gear, light source, special equipment, personal equipment, all gear silenced, and identify discrepancies.

b. **Rehearsals**. Rehearsals ensure the operational proficiency of the mission. Plans are checked and any necessary changes are made. The leader verifies the suitability of the equipment. It is through rehearsals that members become thoroughly familiar with the actions they are to take during the mission. If the mission is to operate at night, conduct both day and night rehearsals. They should be conducted on terrain similar to that on which the mission will operate. If time is limited, only the most critical phases should be rehearsed. Action at the objective area is the most critical phase and should always be rehearsed. The leader should talk the mission through each phase, describing the actions and having each man perform his duties. He should then walk the unit through all phases of the mission, using only signals and commands which will be used during the actual mission.

c. **Pre-Combat Inspections (PCI)**. The patrol leader questions each patrol member to ensure the following is known: mission, planned routes (primary and alternate), and the fire support plan of the patrol, individual's role (what to do and when to do it), what others are to do, how their actions impact, challenges and passwords, codes, reporting times, radio call signs, frequencies, and any other pertinent details. There is usually a period of time between final rehearsal and departure. The patrol leader re-inspects just before departure to ensure all equipment is still in working order and the unit is ready to embark on the mission. The patrol leader also coordinates the location and time that the patrol can test fire all weapons prior to departure.

PERFORMANCE EXAMINATION CHECKLIST

0300-PAT-1004

Given an order with a mission to conduct combat operations, while wearing a fighting load, prepare for combat to ensure the individual is prepared to accomplish the mission.

Student Instructions:

1. You are a Marine and must prepare for combat.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and ensure the individual is prepared to accomplish the mission.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Receive warning order.			
2. Conduct preparations in accordance with warning order.			
a. Camouflage according to warning order.			
b. Gather equipment according to warning order.			
c. Gather ammunition and weapons according to warning order.			
d. Follow time schedule in accordance with warning order.			
e. Assume duties as special purpose teams in accordance with the warning order, as required.			
3. Receive the order.			
a. Take notes during the order.			
4. Conduct rehearsals.			
5. Conduct Pre-Combat Checks.			
a. Check serviceability of helmet with cover, chinstrap, and with appropriate mount.			
b. Ensure Personal Protective Equipment (PPE) is present and serviceable in accordance with the order.			

c. Check the serviceability of the uniform.			
d. Ensure that dog tags two with medical tag (if applicable) and I.D. card are present.			
e. Check time hack.			
f. Examine the Load Bearing Equipment (LBE) with applicable Small Arms Protective Insert (SAPI) plates for serviceability			
g. Ensure that the medical kit is fixed to LBE, is serviceable, and inventory is complete.			
h. Check hydration components to ensure compliance with the order.			
i. Ensure magazines with ammo load and pouches are fixed to the LBE and are clean, serviceable, and in accordance with the order.			
j. Ensure ammo is accessible from the prone, standing, and kneeling positions.			
k. Inspect T/O weapon with optic/sling/required SL-3 and conduct a function check to ensure all items are serviceable			
l. Conduct night vision device and aiming device optic function check and ensure that there are extra batteries.			
m. Ensure note taking gear is packed.			
n. Check that flashlight is operational and that there are extra batteries.			
o. Examine all special/personal equipment to ensure it is present, serviceable, complete, and operational.			
p. Ensure equipment is silenced, as required.			
q. Report discrepancies, as required.			
6. Stand pre-combat inspections.			
a. Recite the mission.			
b. Recite the routes.			
c. Recite your individual assignments.			
d. Recite other patrol members assignments.			
e. Recite the challenge and passwords.			

f. Recite the call signs and frequencies.			
g. Recite the CASEVAC plan.			
h. Prepare uniform, weapons, ammunition, ordnance, and equipment.			
i. Correct identified discrepancies.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGES</u>
MCRP 3-30.7	Commander's Tactical Handbook	132 through 133
MCRP 3-10A.3	Marine Rifle Squad	Chapter 4
MCTP 3-01A	Scouting and Patrolling	Appendix A and Appendix B

NOTES :

STUDENT OUTLINE

LAND NAVIGATION

MCT0402

06/27/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given a lensatic compass, a surveyed point with a level platform, an azimuth marker, and a surveyed known direction, determine the error in a lensatic compass to within three (3) degrees. (0300-PAT-1001)

(2) Given periods of daylight or darkness, a lensatic compass, map, and designated objectives, while wearing a fighting load, navigate with a map and compass to arrive at each designated objective. (0300-PAT-1003)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify the separation distances for proper functioning of a lensatic compass in accordance with TC 3-25.26. (0300-PAT-1001a)

(2) Given a lensatic compass, a surveyed point with a level platform, an azimuth marker, and a surveyed known direction, identify magnetic attractions to determine azimuth error. (0300-PAT-1001b)

(3) Given a graphic and a list of choices, identify the features found on a topographic map in accordance with TC 3-25.26. (0300-PAT-1003a)

(4) Given a list of choices, identify the process for determining an azimuth in accordance with TC 3-25.26. (0300-PAT-1003b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to build your confidence in map reading. I will do this by discussing marginal information on a military map, purpose and types of contour lines, colors used on a military map, determine azimuth, protractors, features on a topographical map, compass and navigating with a compass. This lesson will provide you with the skills to safely and effectively navigate from point to point when given a direction and a distance, utilizing a military topographic map. The techniques you will perform today form the basis of land navigation techniques. This lesson relates to the Patrolling and Defensive Fundamentals training you will receive here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **MARGINAL INFORMATION ON A MILITARY MAP.** (0300-PAT-1003a)

a. **Sheet Name.** The sheet name is found in bold print at the center of the top and in the lower left area of the map margin. A map is generally named for the largest settlement contained within the area covered by the sheet, or for the largest natural feature located within the area at the time the map was drawn.

b. **Sheet Number.** The sheet number is found in bold print in both the upper right and lower left areas of the margin, and in the center box of the adjoining sheets diagram, which is found in the lower right margin. It is used as a reference number to link specific maps to overlays, operations orders, and plans.

c. **Series Name.** The map series name is found in bold print in the upper left corner of the margin. The name given to the series is generally that of a major political subdivision such as a state within the United States or a European nation. A map series usually includes a group of similar maps at the same scale and on the same sheet lines or format designed to cover a particular geographic area. It may

also be a group of maps that serve a common purpose such as the military city maps.

d. **Scale**. The scale is found both in the upper left margin after the series name, and in the center of the lower margin. The scale note is a representative fraction that gives the ratio of a map distance to the corresponding distance on the earth's surface. For example, the scale note 1:50,000 indicates that one unit of measure on the map equals 50,000 units of the same measure on the ground.

e. **Series Number**. The series number is found in both the upper right margin and the lower left margin. It is a sequence reference expressed either as a four-digit numeral (1125) or as a letter, followed by a three- or four-digit numeral (M661, T7110).

f. **Edition Number**. The edition number is found in bold print in the upper right area of the top margin and the lower left area of the bottom margin. Editions are numbered consecutively; therefore, if you have more than one edition, the highest numbered sheet is the most recent.

g. **Index To Boundaries**. The index to boundaries diagram appears in the lower or right margin of all sheets. This diagram, which is a miniature of the map, shows the boundaries that occur within the map area such as county lines and state boundaries.

h. **Adjoining Sheets Diagram**. Maps at all standard scales contain a diagram that illustrates the adjoining sheets. It consists of as many rectangles representing adjoining sheets as are necessary to surround the rectangle that represents the sheet under consideration. The diagram usually contains nine rectangles, but the number may vary depending on the locations of the adjoining sheets.

i. **Elevation Guide**. The elevation guide is normally found in the lower right margin. It is a miniature characterization of the terrain shown. The elevation guide provides the map reader with a means of quick recognition of major landforms.

j. **Declination Diagram**. The declination diagram is located in the lower margin of large-scale maps and indicates

the angular relationships of true north, grid north, and magnetic north. In recent edition maps, there is a note indicating the conversion of azimuths from grid to magnetic and from magnetic to grid next to the declination diagram. Declination is the angular difference between any two norths. If you have a map and a compass, the declination of most interest to you will be between magnetic and grid north. The declination diagram shows the angular relationship, represented by prongs, among grid, magnetic, and true norths. While the relative positions of the prongs are correct, they are seldom plotted to scale. Do not use the diagram to measure a numerical value. This value will be written in the map margin (in both degrees and mils) beside the diagram.

(1) With Notes. Simply refer to the conversion notes that appear in conjunction with the diagram explaining the use of the G-M angle. One note provides instructions for converting magnetic azimuth to grid azimuth; the other, for converting grid azimuth to magnetic azimuth. The conversion (add or subtract) is governed by the direction of the magnetic-north prong relative to that of the grid-north prong.

(2) Applications. Remember, there are no negative azimuths on the azimuth circle. Since 0 degree is the same as 360 degrees, then 2 degrees is the same as 362 degrees. This is because 2 degrees and 362 degrees are located at the same point on the azimuth circle. The grid azimuth can now be converted into a magnetic azimuth because the grid azimuth is now larger than the G-M angle.

k. Bar Scales. Bar scales are located in the center of the lower margin. They are rulers used to convert map distance to ground distance. Maps have three or more bar scales, each in a different unit of measure. Care should be exercised when using the scales, especially in the selection of the unit of measure that is needed. A graphic scale is a ruler printed on the map and is used to convert distances on the map to actual ground distances. The graphic scale is divided into two parts. To the right of the zero, the scale is marked in full units of measure and is called the primary scale. To the left of the zero, the scale is divided into tenths and is called the extension scale. Most maps have three or more graphic scales, each using a different unit of measure. When using the graphic scale, be sure to use the correct scale for the unit of measure desired.

l. **Contour Interval Note.** The contour interval note is found in the center of the lower margin normally below the bar scales. It states the vertical distance between adjacent contour lines of the map.

m. **Spheroid Note.** The spheroid note is located in the center of the lower margin. Spheroids (ellipsoids) have specific parameters that define the X Y Z axis of the earth. The spheroid is an integral part of the datum.

n. **Grid Note.** The grid note is located in the center of the lower margin. It gives information pertaining to the grid system used and the interval between grid lines, and it identifies the UTM grid zone number.

o. **Legend.** The legend is located in the lower left margin. It illustrates and identifies the topographic symbols used to depict some of the more prominent features on the map. The symbols are not always the same on every map. Always refer to the legend to avoid errors when reading a map.

p. **Additional Notes.** Not all maps contain the same items of marginal information. Under certain conditions, special notes and scales may be added to aid the map user.

2. **PURPOSE AND TYPES OF CONTOUR LINES.** (0300-PAT-1003a)

The elevation of points on the ground and the relief of an area affect the movement, positioning, and, in some cases, effectiveness of military units. They must also be able to determine the elevation and relief of areas on standard military maps. There must be a reference or start point to measure anything. The reference or start point for vertical measurement of elevation on a standard military map is the datum plane or mean sea level, the point halfway between high tide and low tide. Elevation of a point on the earth's surface is the vertical distance it is above or below mean sea level.

a. **Contour Lines.** Contour lines are the most common method of showing relief and elevation on a standard topographic map. A contour line represents an imaginary line on the ground, above or below sea level. All points on the contour line are at the same elevation. The elevation represented by contour lines is the vertical distance above or below sea level. The three types of contour lines used on a standard topographic map are index, intermediate, and supplementary.

(1) Index. Starting at zero elevation or mean sea level, every fifth contour line is a heavier line. These are known as index contour lines. Normally, each index contour line is numbered at some point. This number is the elevation of that line.

(2) Intermediate. The contour lines falling between the index contour lines are called intermediate contour lines. These lines are finer and do not have their elevations given. There are normally four intermediate contour lines between index contour lines.

(3) Supplementary. These contour lines resemble dashes. They show changes in elevation of at least one-half the contour interval. Supplementary lines are normally found where there is very little change in elevation such as on fairly level terrain.

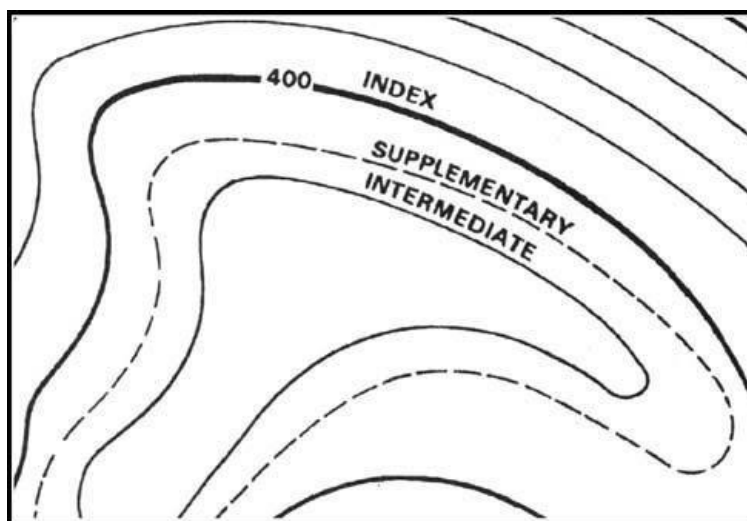


Figure 10-1. Contour lines.

b. Contour Intervals. Before the elevation of any point on the map can be determined, the user must know the contour interval for the map he is using. The contour interval measurement given in the marginal information is the vertical distance between adjacent contour lines. Use the following procedures to determine the elevation of a point on the map.

(1) Determine the contour interval and the unit of measure used; for example, feet, meters, or yards.

(2) Find the numbered index contour line nearest the point you are trying to determine the elevation for (Figure 103).

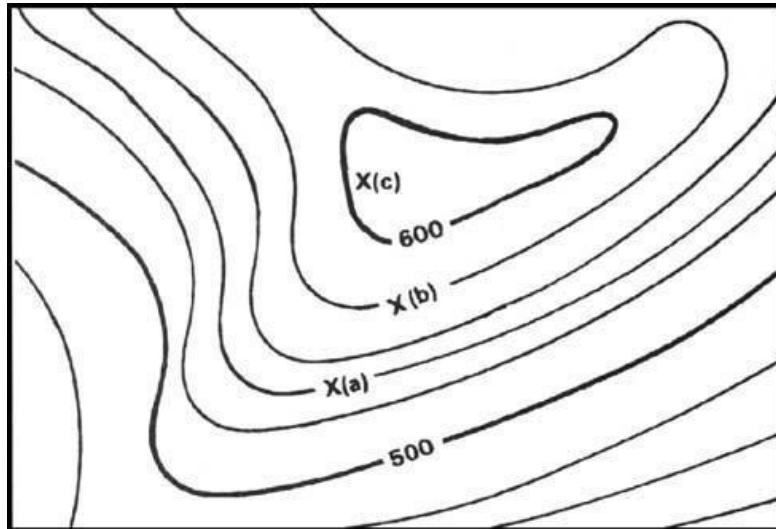


Figure 10-3. Points on contour lines.

(3) Determine if you are going from lower elevation to higher, or vice versa. In Figure 10-3, point (a) is between the index contour lines. The lower index contour line is numbered 500, which means any point on that line is at an elevation of 500 meters above mean sea level. The upper index contour line is numbered 600, or 600 meters. Going from the lower to the upper index contour line shows an increase in elevation.

(4) To determine the exact elevation of point (a), start at the index contour line numbered 500 and count the number of intermediate contour lines to point (a). Point (a) is located on the second intermediate contour line above the 500-meter index contour line. The contour interval is 20 meters (Figure 10-2), thus each intermediate contour line crossed to get to point (a) adds 20 meters to the 500-meter index contour line. The elevation of point (a) is 540 meters; the elevation has increased.

(5) To determine the elevation of point (b), go to the nearest index contour line. In this case, it is the upper index contour line numbered 600. Point (b) is located on the intermediate contour line immediately below the 600-meter index contour line. Below means downhill or a lower elevation.

Therefore, point (b) is located at an elevation of 580 meters. Remember, if you are increasing elevation, add the contour interval to the nearest index contour line. If you are decreasing elevation, subtract the contour interval from the nearest index contour line.

(6) To determine the elevation to a hilltop, point (c), add one-half the contour interval to the elevation of the last contour line. In this example, the last contour line before the hilltop is an index contour line numbered 600. Add one-half the contour interval, 10 meters, to the index contour line. The elevation of the hilltop would be 610 meters.

(7) There may be times when you need to determine the elevation of points to a greater accuracy. To do this, you must determine how far between the two contour lines the point lies. However, most military needs are satisfied by estimating the elevation of points between contour lines (Figure 10-4).

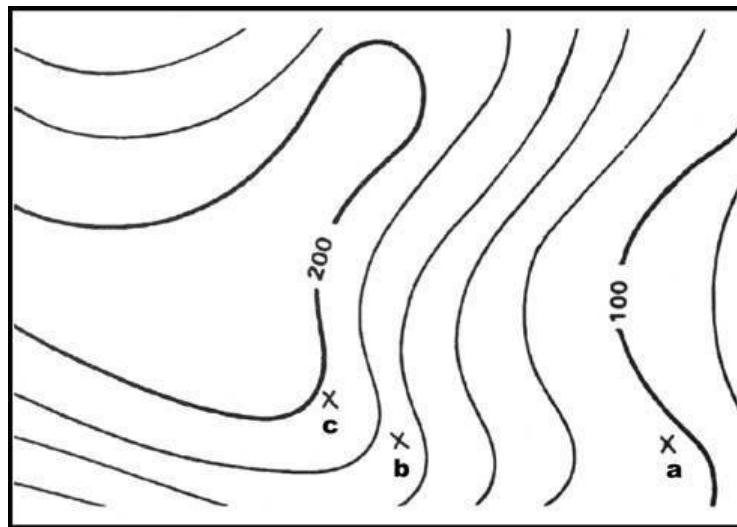


Figure 10-4. Points between contour lines.

(a) If the point is less than one-fourth the distance between contour lines, the elevation will be the same as the last contour line. In Figure 10-4, the elevation of point a will be 100 meters. To estimate the elevation of a point between one-fourth and three-fourths of the distance between contour lines, add one-half the contour interval to the last contour line.

(b) Point b is one-half the distance between contour lines. The contour line immediately below point b is at an elevation of 160 meters. The contour interval is 20

meters; thus one-half the contour interval is 10 meters. In this case, add 10 meters to the last contour line of 160 meters. The elevation of point b would be about 170 meters.

(c) A point located more than three-fourths of the distance between contour lines is considered to be at the same elevation as the next contour line. Point c is located three-fourths of the distance between contour lines. In Figure 10-4, point c would be considered to be at an elevation of 200 meters.

(8) To estimate the elevation to the bottom of a depression, subtract one-half the contour interval from the value of the lowest contour line before the depression. In Figure 10-5, the lowest contour line before the depression is 240 meters in elevation. Thus, the elevation at the edge of the depression is 240 meters. To determine the elevation at the bottom of the depression, subtract one-half the contour interval. The contour interval for this example is 20 meters. Subtract 10 meters from the lowest contour line immediately before the depression. The result is that the elevation at the bottom of the depression is 230 meters. The tick marks on the contour line forming a depression always point to lower elevations.

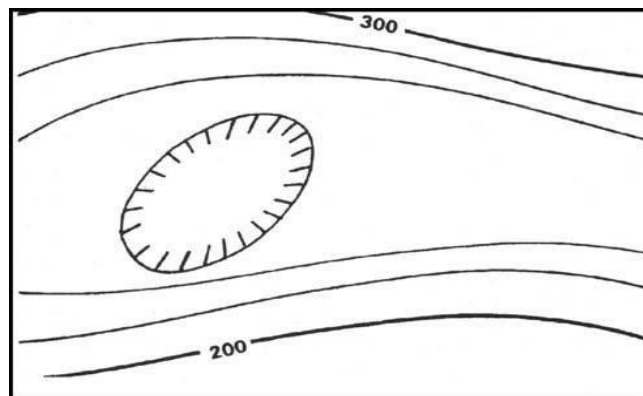


Figure 10-5. Depression.

3. COLORS USED ON A MILITARY MAP. (0300-PAT-1003a)

a. By the fifteenth century, most European maps were carefully colored. Profile drawings of mountains and hills were shown in brown, rivers and lakes in blue, vegetation in green, roads in yellow, and special information in red. A look at the legend of a modern map confirms that the use of

colors has not changed much over the past several hundred years.

b. To facilitate the identification of features on a map, the topographical and cultural information is usually printed in different colors. These colors may vary from map to map. On a standard large-scale topographic map, the colors used and the features each represent are—

(1) Black. Black indicates cultural (man-made) features such as buildings and roads, surveyed spot elevations, and all labels.

(2) Red-Brown. The colors red and brown are combined to identify cultural features, all relief features, non-surveyed spot elevations, and elevation such as contour lines on red-light readable maps.

(3) Blue. Blue identifies hydrography or water features such as lakes, swamps, rivers, and drainage.

(4) Green. Green identifies vegetation with military significance such as woods, orchards, and vineyards.

(5) Brown. Brown identifies all relief features and elevation such as contours on older edition maps and cultivated land on red-light readable maps.

(6) Red. Red classifies cultural features, such as populated areas, main roads, and boundaries, on older maps.

4. DETERMINE AZIMUTH. (0300-PAT-1003)

Being in the right place at the prescribed time is necessary to successfully accomplish military missions. Direction plays an important role in a Marines' everyday life. Military personnel need a way of expressing direction that is accurate, is adaptable to any part of the world, and has a common unit of measure. Directions are expressed as units of angular measure.

a. Degree. The most common unit of measure is the degree (°) with its subdivisions of minutes (') and seconds ("). 1 degree = 60 minutes. 1 minute = 60 seconds.

b. **Base Lines**. In order to measure something, there must always be a starting point or zero measurement. To express direction as a unit of angular measure, there must be a starting point or zero measure and a point of reference. These two points designate the base or reference line. There are three base lines true north, magnetic north, and grid north (Figure 61, page 6-2). The most commonly used are magnetic and grid.

(1) **True North**. True north is defined as a line from any point on the earth's surface to the north pole. All lines of longitude are true north lines. True north is usually represented by a star.

(2) **Magnetic North**. Magnetic north is the direction to the north magnetic pole, as indicated by the north-seeking needle of a magnetic instrument. The magnetic north is usually symbolized by a line ending with half of an arrowhead. Magnetic readings are obtained with magnetic instruments such as lensatic compass.

(3) **Grid North**. Grid north is the north that is established by using the vertical grid lines on the map. Grid north may be symbolized by the letters GN or the letter "y".

c. **Azimuths**. An azimuth is defined as a horizontal angle measured clockwise from a north base line. This north base line could be true north, magnetic north, or grid north. The azimuth is the most common military method to express direction. When using an azimuth, the point from which the azimuth originates is the center of an imaginary circle. This circle is divided into 360 degrees.

(1) **Back Azimuth**. A back azimuth is the opposite direction of an azimuth. It is comparable to doing "about face." To obtain a back azimuth from an azimuth, **add** 180 degrees if the azimuth is 180 degrees or **less; subtract** 180 degrees if the azimuth is 180 degrees or **more**. A memory aid commonly used is **LESS ADD, MORE SUBTRACT**. The back azimuth of 180 degrees may be stated as 0 degrees or 360 degrees. When converting azimuths into back azimuths, extreme care should be exercised when adding or subtracting the 180 degrees. A simple mathematical mistake could cause disastrous consequences.

(2) Magnetic Azimuth. The magnetic azimuth is determined by using magnetic instruments such as lensatic compass.

(3) Grid Azimuths. When an azimuth is plotted on a map between point A (starting point) and point B (ending point), the points are joined together by a straight line. A protractor is used to measure the angle between grid north and the drawn line, and this measured azimuth is the grid azimuth. When measuring azimuths on a map, remember that you are measuring from a starting point to an ending point. If a mistake is made and the reading is taken from the ending point, the grid azimuth will be opposite, thus causing the user to go in the wrong direction.

d. Bypassing An Obstacle. To bypass enemy positions or obstacles and still stay oriented, detour around the obstacle by moving at right angles for specified distances. A memory aid commonly used to bypass obstacles is **RIGHT ADD 90°, LEFT SUBTRACT 90°**.

(1) For example, while moving on an azimuth of 90 degrees change your azimuth to 180 degrees and travel for 100 meters. Change your azimuth to 90 degrees and travel for 150 meters. Change your azimuth to 360 degrees and travel for 100 meters. Then, change your azimuth to 90 degrees and you are back on your original azimuth line (Figure 9-5).

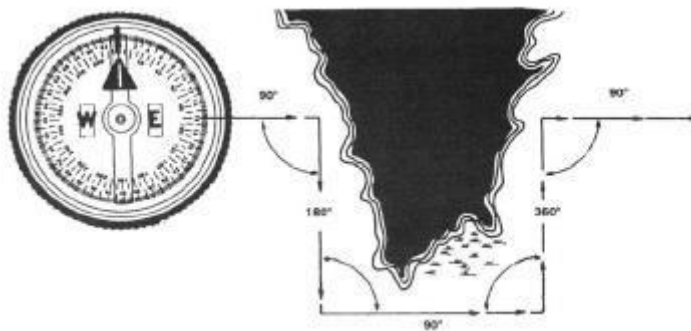


Figure 9-5. Bypassing an obstacle.

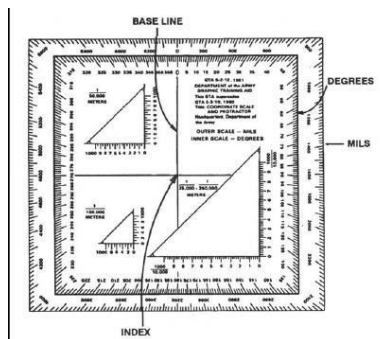
(2) Bypassing an unexpected obstacle at night is a simple matter. To make a 90-degree turn to the right, hold the compass in the centerhold technique; turn until the center of the luminous letter E is under the luminous line (do not move the bezel ring). To make a 90-degree turn to the left, turn until the center of the luminous letter W is under the

luminous line. This does not require changing the compass setting (bezel ring), and it ensures accurate 90-degree turns.

5. PROTRACTORS.

There are several types of protractors—full circle, half circle, square, and rectangular (Figure 6-5). All of them divide the circle into units of angular measure, and each has a scale around the outer edge and an index mark. The index mark is the center of the protractor circle from which all directions are measured.

a. The military protractor, GTA 5-2-12, contains two scales: one in degrees (inner scale) and one in mils (outer scale). This protractor represents the azimuth circle. The degree scale is graduated from 0 to 360 degrees with each tick mark representing one degree. A line from 0 to 180 degrees is called the base line of the protractor. The index or center of the protractor is where the base line intersects the horizontal line, between 90 and 270 degrees (Figure 6-6, page 6-6).



(1) Grid Coordinate Scales. The primary tool for plotting grid coordinates is the grid coordinate scale. The grid coordinate scale divides the grid square more accurately than can be done by estimation, and the results are more consistent. When used correctly, it presents less chance for making errors. GTA 5-2-12 contains four types of coordinate scales. (Figure 4-14, page 4-16)

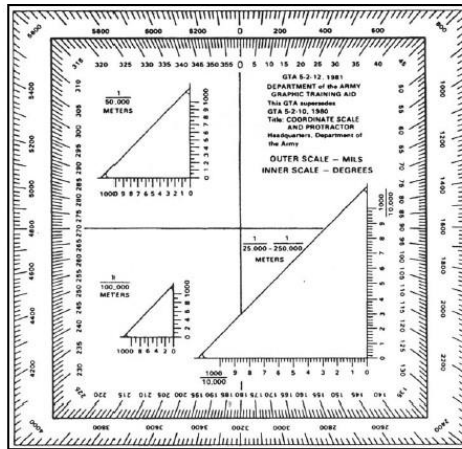


Figure 4-14. Coordinate scales.

(2) The 1:25,000/1:250,000 (lower right in figure) can be used in two different scale maps, 1:25,000 or 1:250,000. The 1:25,000 scale subdivides the 1,000-meter grid block into 10 major subdivisions, each equal to 100 meters. Each 100-meter block has five graduations, each equal to 20 meters. Points falling between the two graduations can be read accurately by the use of estimation. These values are the fourth and eighth digits of the coordinates.

(3) Likewise, the 1:250,000 scale is subdivided into 10 major subdivisions, each equal to 1,000 meters. Each 1,000-meter block has five graduations, each equal to 200 meters. Points falling between two graduations can be read approximately by the use of estimation.

(4) The 1:50,000 scale (upper left in Figure 4-14) subdivides the 1,000-meter block into 10 major subdivisions, each equal to 100 meters. Each 100-meter block is then divided in half. Points falling between the graduations must be estimated to the nearest 10 meters for the fourth and eighth digits of the coordinates.

(5) The 1:100,000 scale (lower left in Figure 4-14) subdivides the 1,000-meter grid block into five major subdivisions of 200 meters each. Each 200-meter block is then divided in half at 100-meter intervals.

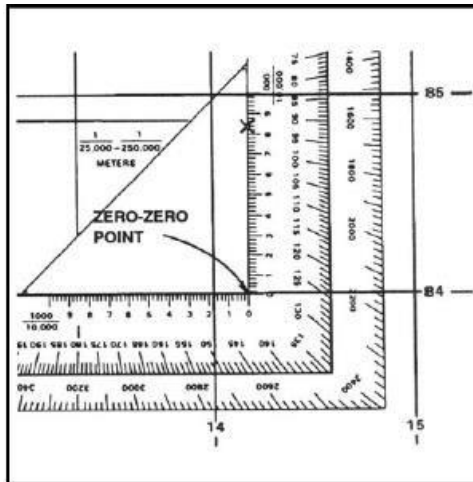


Figure 6-6. Military protractor.

(6) When using the protractor, the base line is always oriented parallel to a north-south grid line. The 0- or 360 degree mark is always toward the top or north on the map and the 90-degree mark is to the right.

b. **Locating A Point Using Grid Coordinates.** Based on the military principle for reading maps (RIGHT and UP), locations on the map can be determined by grid coordinates. The number of digits represents the degree of precision to which a point has been located and measured on a map, the more digits the more precise the measurement.

(1) **Without A Coordinate Scale.** In order to determine grids without a coordinate scale, the reader simply refers to the north-south grid lines numbered at the bottom margin of any map. Then he reads RIGHT to the north-south grid line that precedes the desired point (this first set of two digits is the RIGHT reading).

(a) Then by referring to the east-west grid lines numbered at either side of the map, the map reader moves UP to the east-west grid line that precedes the desired point (these two digits are the UP reading). Coordinates 1484 locate the 1,000-meter grid square in which point X is located; the next square to the right would be 1584; the next square up would be 1485, and so forth (Figure 4-15).

(b) To locate the point to the nearest 100 meters, use estimation. By mentally dividing the grid square in tenths, estimate the distance from the grid line to the point

in the same order (RIGHT and UP). Give complete coordinate RIGHT, then complete coordinate UP. Point X is about two-tenths or 200 meters to the RIGHT into the grid square and about seven-tenths or 700 meters UP. The coordinates to the nearest 100 meters are 142847.

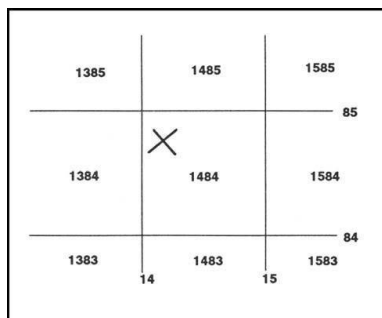


Figure 4-15. Determining grids without coordinate point.

(2) With A Coordinate Scale. In order to use the coordinate scale for determining grid coordinates, the map user has to make sure that the appropriate scale is being used on the corresponding map, and that the scale is right side up.

(a) To ensure the scale is correctly aligned, place it with the zero-zero point at the lower left corner of the grid square. Keeping the horizontal line of the scale directly on top of the east-west grid line, slide it to the right until the vertical line of the scale touches the point for which the coordinates are desired.

(b) When reading coordinates, examine the two sides of the coordinate scale to ensure that the horizontal line of the scale is aligned with the east-west grid line, and the vertical line of the scale is parallel with the north-south grid line. The scale is used when precision of more than 100 meters is required.

(c) To locate the point to the nearest 10 meters, measure the hundredths of a grid square RIGHT and UP from the grid lines to the point. Point X is about 17 hundredths or 170 meters RIGHT and 84 hundredths or 840 meters UP. The coordinates to the nearest 10 meters are 14178484.

(d) Care should be exercised by the map reader using the coordinate scale when the desired point is located within the zero-zero point and the number 1 on the scale.

Always prefix a zero if the hundredths reading is less than 10. In Figure 4-17, the desired point should be reported as 14818407.

(3) Recording And Reporting Grid Coordinates.

Coordinates are written as one continuous number without spaces, parentheses, dashes, or decimal points; they must always contain an even number of digits. Therefore, whoever is to use the written coordinates must know where to make the split between the RIGHT and UP readings.

(a) It is a military requirement that the 100,000meter square identification letters be included in any point designation. Normally, grid coordinates are determined to the nearest 100 meters (six digits) for reporting locations.

(b) With practice, this can be done without using plotting scales. The location of targets and other point locations for fire support are determined to the nearest 10 meters (eight digits).

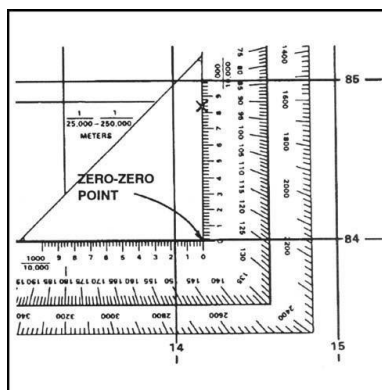


Figure 4-16. Placing a coordinate scale on a grid.

c. Determining Distance.

(1) Straight line distance. To determine straight-line distance between two points on a map, lay a straight-edged piece of paper on the map so that the edge of the paper touches both points and extends past them. Make a tick mark on the edge of the paper at each point (Figure 5-3).

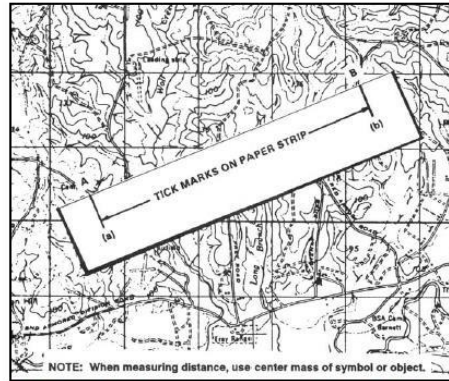


Figure 5-3. Transferring map distance to paper strip.

(a) To convert the map distance to ground distance, move the paper down to the graphic bar scale, and align the right tick mark (b) with a printed number in the primary scale so that the left tick mark (a) is in the extension scale (Figure 5-4).

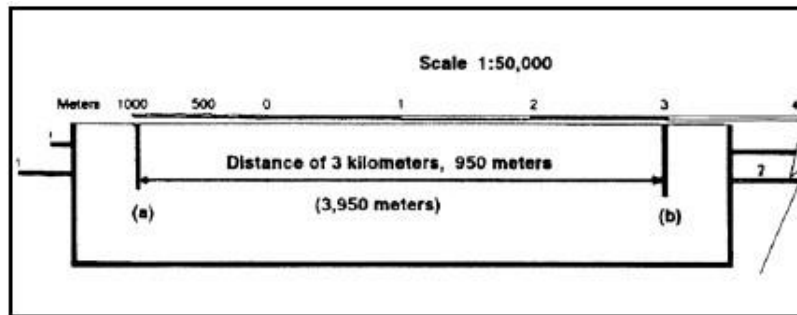


Figure 5-4. Measuring straight-line map distance.

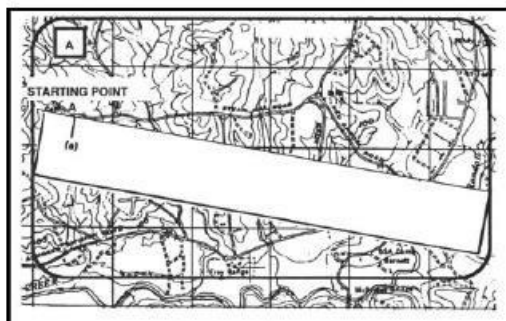
(b) The right tick mark (b) is aligned with the 3,000-meter mark in the primary scale, thus the distance is at least 3,000 meters. To determine the distance between the two points to the nearest 10 meters, look at the extension scale. The extension scale is numbered with zero at the right and increases to the left. When using the extension scale, always read right to left (Figure 5-4). From the zero left to the beginning of the first shaded area is 100 meters.

(c) From the beginning to the end of the shaded square is about 100 to 200 meters. From the end of the first shaded square to the beginning of the second shaded square is about 200 to 300 meters. Remember, the distance in the extension scale increases from right to left.

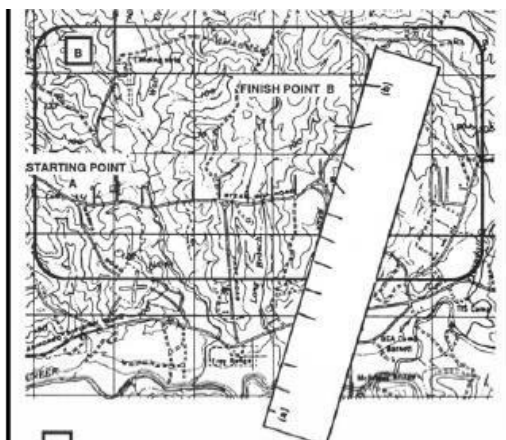
(d) To determine the distance from the zero to tick mark (a), divide the distance inside the squares into tenths (Figure 5-4). As you break down the distance between the squares in the extension scale into tenths, you will see that tick mark (a) is aligned with the 950-meter mark. Adding the distance of 3,000 meters determined in the primary scale to the 950 meters determined by using the extension scale, the total distance between points (a) and (b) is 3,950 meters.

(2) Curved Line Distance. To measure distance along a road, stream, or other curved line, the straight edge of a piece of paper is used. In order to avoid confusion concerning the point to begin measuring from and the ending point, an eight digit coordinate should be given for both the starting and ending points.

(a) Place a tick mark on the paper and map at the beginning point from which the curved line is to be measured. Align the edge of the paper along a straight portion and make a tick mark on both map and paper when the edge of the paper leaves the straight portion of the line being measured (A, Figure 5-5, page 5-6).



A, Figure 5-5



B, Figure 5-5

(b) Keeping both tick marks together (on paper and map), place the point of the pencil close to the edge of the paper on the tick mark to hold it in place. Then, pivot the paper until another straight portion of the curved line is aligned with the edge of the paper. Continue in this manner until the measurement is completed (B, Figure 5-5, page 5-6).

(c) When you have completed measuring the distance, move the paper to the graphic scale to determine the ground distance. The only tick marks you will be measuring the distance between are tick marks (a) and (b). The tick marks in between are not used (C, Figure 5-5)

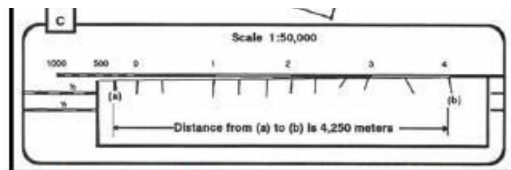


Figure 5-5. Measuring a curved line.

(3) Exact Distance. There may be times when the distance you measure on the edge of the paper exceeds the graphic scale. In this case, there are different techniques you can use to determine the distance.

(a) One technique is to align the right tick mark with a printed number in the primary scale, in this case the 5. You can see that from point (a) to point (b) is more than 6,000 meters when you add the 1,000 meters in the extension scale.

(b) To determine the exact distance to the nearest 10 meters, place a tick mark (c) on the edge of the paper at the end of the extension scale (A, Figure 5-6). You know that from point (b) to point (c) is 6,000 meters. With the tick mark (c) placed on the edge of the paper at the end of the extension scale, slide the paper to the right.

(c) Remember, the distance in the extension is always read from right to left. Align tick mark (c) with zero and then measure the distance between tick marks (a) and (c). The distance between tick marks (a) and (c) is 420 meters. The total ground distance between start and finish points is 6,420 meters (B, Figure 5-6).

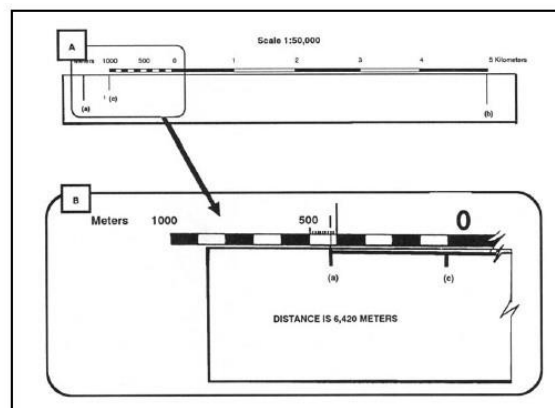


Figure 5-6. Determining the exact distance.

(4) Another technique that may be used to determine exact distance between two points when the edge of the paper exceeds the bar scale is to slide the edge of the paper to the right until tick mark (a) is aligned with the edge of the extension scale. Make a tick mark on the paper, in line with the 2,000-meter mark (c) (A, Figure 5-7, page 5-8).

(a) Then slide the edge of the paper to the left until tick mark (b) is aligned with the zero. Estimate the 100-meter increments into 10-meter increments to determine how many meters tick mark (c) is from the zero line (B, Figure 5-7, page 5-8). The total distance would be 3,030 meters.

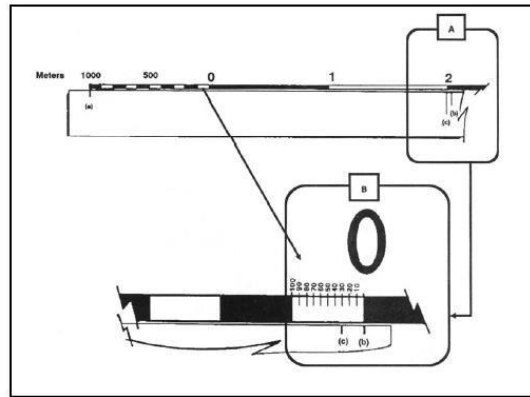


Figure 5-7. Reading the extension scale.

d. **Pace Count**. Another way to measure ground distance is the pace count. A pace is equal to one natural step, about 30 inches long. In order to accurately use the pace count method, you must know how many paces it takes you to walk 100 meters. To determine this, you must walk an accurately measured course and count the number of paces you take.

(1) A pace course can be as short as 100 meters or as long as 600 meters. The pace course, regardless of length, must be on similar terrain to that you will be walking over. It does no good to walk a course on flat terrain and then try to use that pace count on hilly terrain.

(2) To determine your pace count on a 600-meter course, count the paces it takes you to walk the 600 meters, then divide the total paces by 6. The answer will give you the average paces it takes you to walk 100 meters. It is important that each person who navigates while dismounted knows his pace count.

(3) There are many methods to keep track of the distance traveled when using the pace count. Some of these methods are; put a pebble in your pocket every time you have walked 100 meters according to your pace count; tie knots in a string; or put marks in a notebook.

(4) Do not try to remember the count; always use one of these methods or design your own method.

(5) Certain conditions affect your pace count in the field, and you must allow for them and make necessary adjustments.

(a) Slopes. Your pace lengthens on a downslope and shortens on an upgrade. Keeping this in mind, if it normally takes you 120 paces to walk 100 meters, your pace count may increase to 130 or more when walking up a slope.

(b) Winds. A head wind shortens the pace and a tail wind increases it.

(c) Surfaces. Sand, gravel, mud, snow, and similar surface materials tend to shorten the pace.

(d) Elements. Falling snow, rain, or ice cause the pace to be reduced in length.

(e) Clothing. Excess clothing and boots with poor traction affect the pace length.

(f) Visibility. Poor visibility, such as in fog, rain, or darkness, will shorten your pace.

6. FEATURES OF A TOPOGRAPHIC MAP. (0300-PAT-1003a)

a. Slope. The rate of rise or fall of a terrain feature is known as its slope. Depending on the military mission, Soldiers may need to determine not only the height of a hill, but the degree of the hill's slope as well.

(1) The speed at which equipment or personnel can move is affected by the slope of the ground or terrain feature. This slope can be determined from the map by studying the contour lines—the closer the contour lines, the steeper the slope; the farther apart the contour lines, the gentler the slope. Four types of slopes that concern the military are gentle, steep, concave, and convex.

(a) Gentle. Contour lines showing a uniform, gentle slope will be evenly spaced and wide apart. Considering

relief only, a uniform, gentle slope allows the defender to use grazing fire. The attacking force must climb a slight incline.

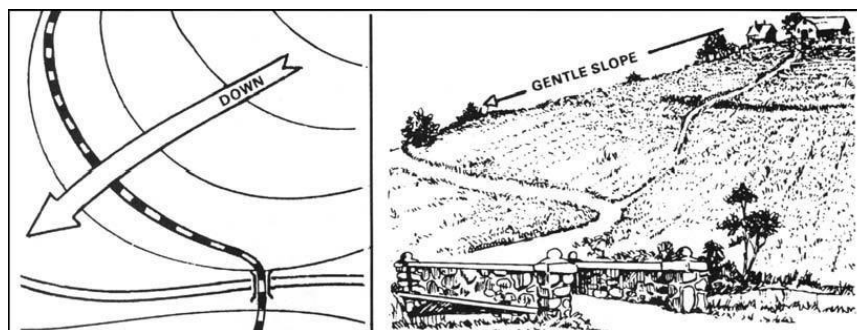


Figure 10-6. Uniform, gentle slope.

(b) Steep. Contour lines showing a uniform, steep slope on a map will be evenly spaced, but close together. Remember, the closer the contour lines, the steeper the slope. Considering relief only, a uniform, steep slope allows the defender to use grazing fire, and the attacking force must negotiate a steep incline.

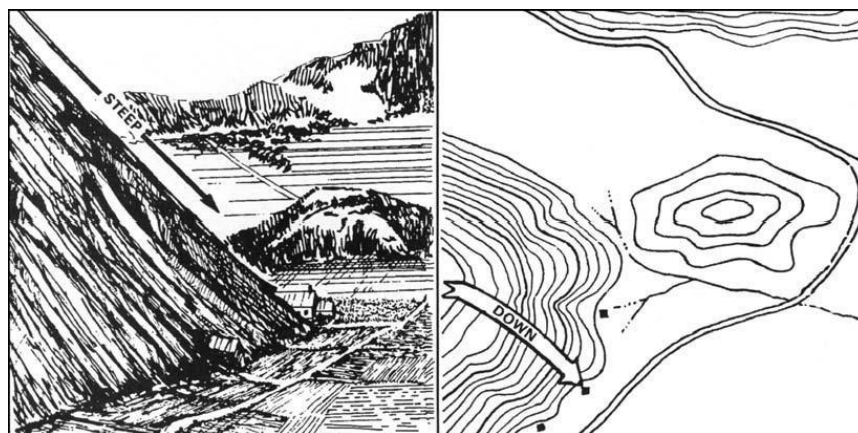


Figure 10-7. Uniform, steep slope.

(c) Concave. Contour lines showing a concave slope on a map will be closely spaced at the top of the terrain feature and widely spaced at the bottom considering relief only, the defender at the top of the slope can observe the entire slope and the terrain at the bottom, but he cannot use grazing fire. The attacker would have no cover from the defender's observation of fire, and his climb would become more difficult as he gets farther up the slope.

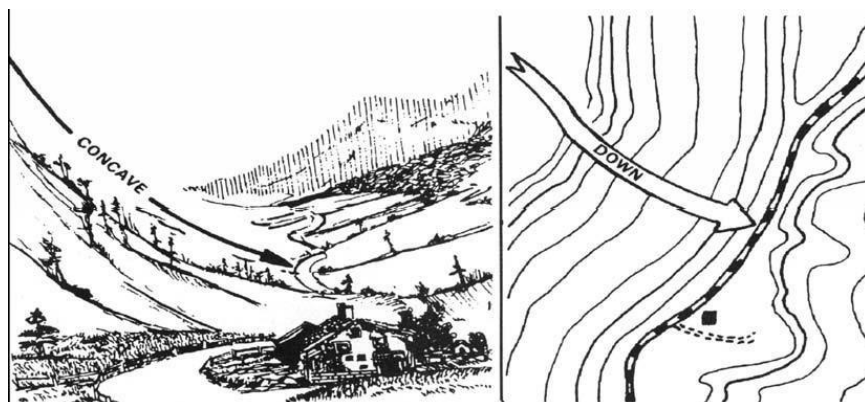


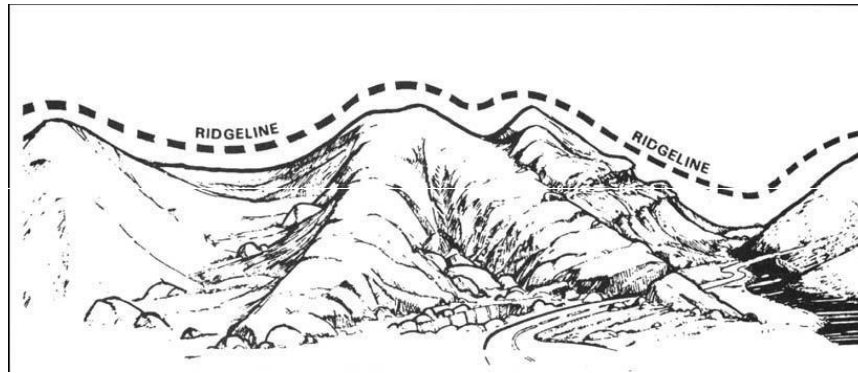
Figure 10-8. Concave slope.

(d) Convex. Contour lines showing a convex slope on a map will be widely spaced at the top and closely spaced at the bottom. Considering relief only, the defender at the top of the convex slope can obtain a small distance of grazing fire, but he cannot observe most of the slope or the terrain at the bottom. The attacker will have concealment on most of the slope and an easier climb as he nears the top.



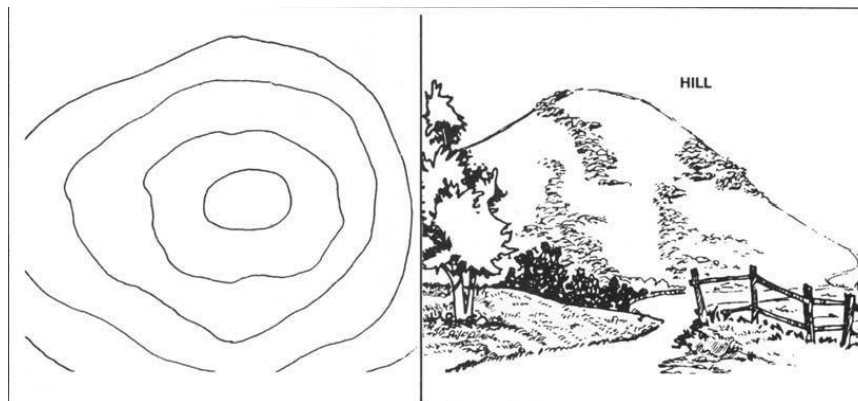
Figure 10-9. Convex slope.

b. **Terrain Features**. All terrain features are derived from a complex landmass known as a mountain or ridgeline. The term ridgeline is not interchangeable with the term ridge. A ridgeline is a line of high ground, usually with changes in elevation along its top and low ground on all sides from which a total of 10 natural or man-made terrain features are classified.



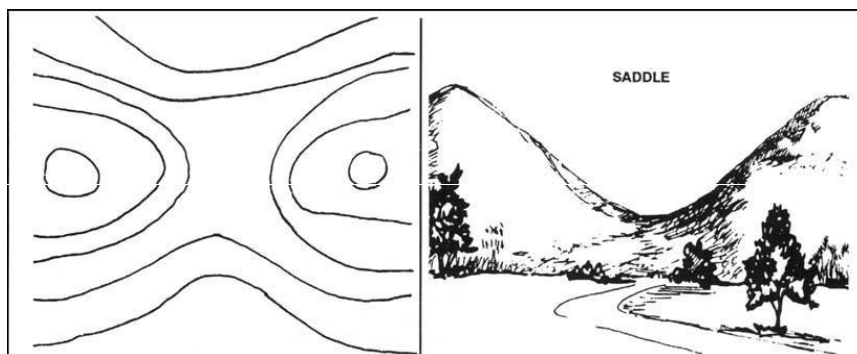
Ridgeline.

(1) Hill. A hill is an area of high ground. From a hilltop, the ground slopes down in all directions. A hill is shown on a map by contour lines forming concentric circles. The inside of the smallest closed circle is the hilltop.



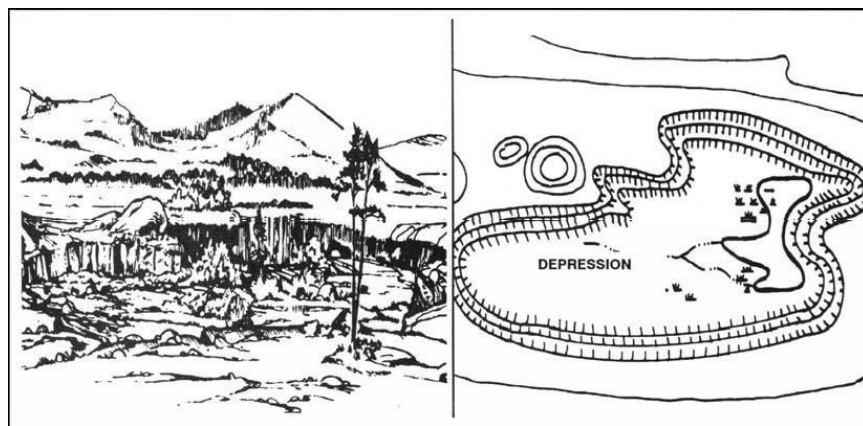
Hill.

(2) Saddle. A saddle is a dip or low point between two areas of higher ground. A saddle is not necessarily the lower ground between two hilltops; it may be simply a dip or break along a level ridge crest. If you are in a saddle, there is high ground in two opposite directions and lower ground in the other two directions. A saddle is normally represented as an hourglass



Saddle.

(3) Depression. A depression is a low point in the ground or a sinkhole. It could be described as an area of low ground surrounded by higher ground in all directions, or simply a hole in the ground. Usually only depressions that are equal to or greater than the contour interval will be shown. On maps, depressions are represented by closed contour lines that have tick marks pointing toward low ground.

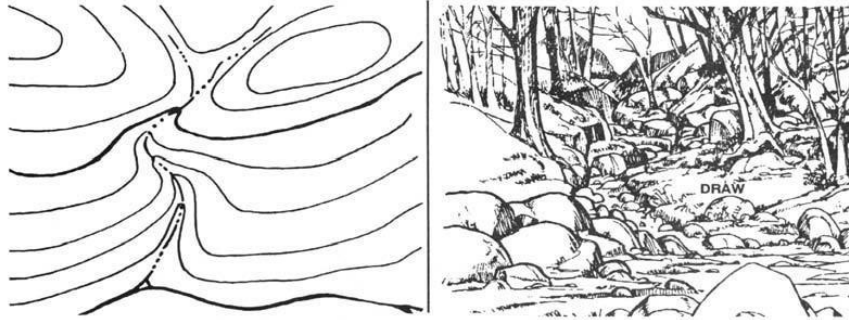


Depression.

(4) Draw. A draw is a stream course that is less developed than a valley. In a draw, there is essentially no level ground and, therefore, little or no maneuver room within its confines. If you are standing in a draw, the ground slopes upward in three directions and downward in the other

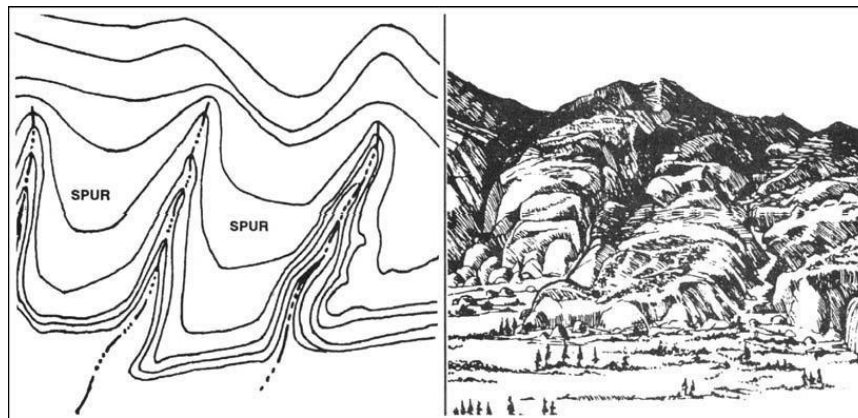
direction. A draw could be considered as the initial formation of a valley. The contour lines depicting a draw are U-shaped or V-shaped, pointing toward high ground.

Draw.



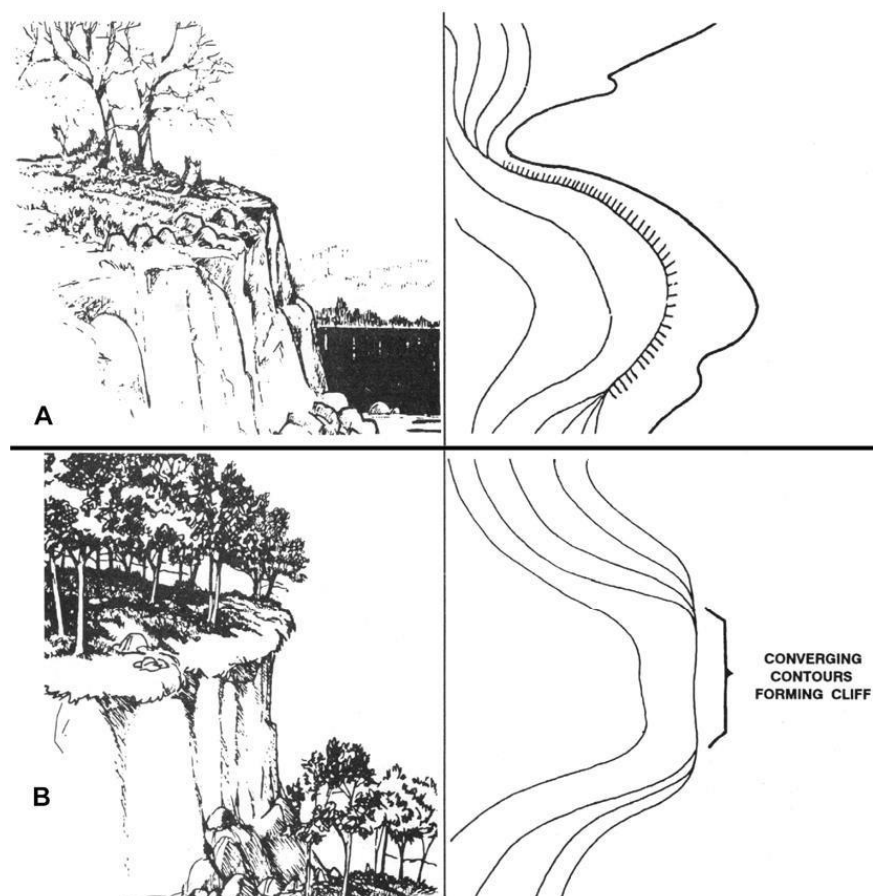
(5) Spur. A spur is a short, continuous sloping line of higher ground, normally jutting out from the side of a ridge. A spur is often formed by two roughly parallel streams cutting draws down the side of a ridge. The ground will slope down in three directions and up in one. Contour lines on a map depict a spur with the U or V pointing away from high ground.

Spur.



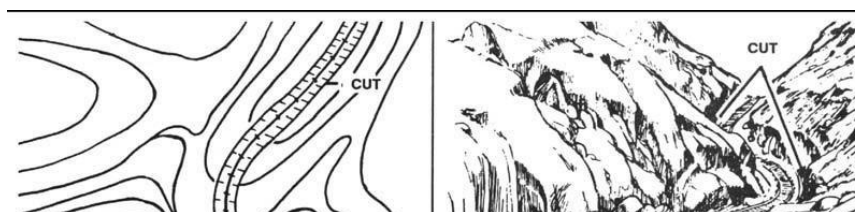
(6) Cliff. A cliff is a vertical or near vertical feature; it is an abrupt change of the land. When a slope is so steep that the contour lines converge into one "carrying" contour of contours, this last contour line has tick marks pointing toward low ground (A, Figure 10-24). Cliffs are also

shown by contour lines very close together and, in some instances, touching each other (B, Figure 10-24).



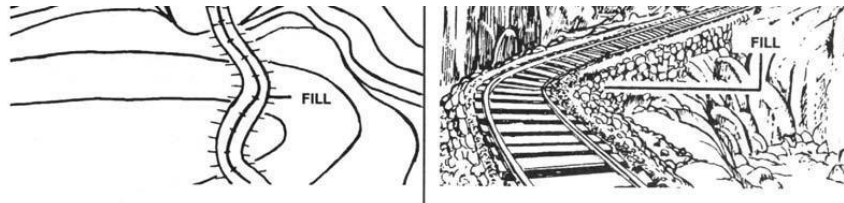
CLIFF

(7) Cut. A cut is a man-made feature resulting from cutting through raised ground, usually to form a level bed for a road or railroad track. Cuts are shown on a map when they are at least 10 feet high, and they are drawn with a contour line along the cut line. This contour line extends the length of the cut and has tick marks that extend from the cut line to the roadbed, if the map scale permits this level of detail



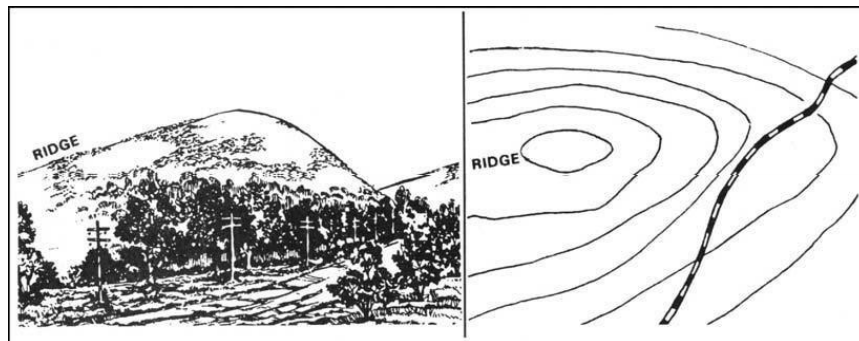
Cut

(8) Fill. A fill is a man-made feature resulting from filling a low area, usually to form a level bed for a road or railroad track. Fills are shown on a map when they are at least 10 feet high, and they are drawn with a contour line along the fill line. This contour line extends the length of the filled area and has tick marks that point toward lower ground. If the map scale permits, the length of the fill tick marks are drawn to scale and extend from the base line of the fill symbol.



FILL

(9) Ridge. A ridge is a sloping line of high ground. If you are standing on the center line of a ridge, you will normally have low ground in three directions and high ground in one direction with varying degrees of slope. If you cross a ridge at right angles, you will climb steeply to the crest and then descend steeply to the base. When you move along the path of the ridge, depending on the geographic location, there may be either an almost unnoticeable slope or an obvious incline. Contour lines forming a ridge tend to be U-shaped or V-shaped. The closed end of the contour line points away from high ground



Ridge.

(10) Valley. A valley is a stretched-out groove in the land, usually formed by streams or rivers. A valley

begins with high ground on three sides and usually has a course of running water through it. If standing in a valley, three directions offer high ground, while the fourth direction offers low ground. Depending on its size and where a person is standing, it may not be obvious that there is high ground in the third direction, but water flows from higher to lower ground. Contour lines forming a valley are either U-shaped or V-shaped. To determine the direction water is flowing, look at the contour lines. The closed end of the contour line (U or V) always points upstream or toward high ground.

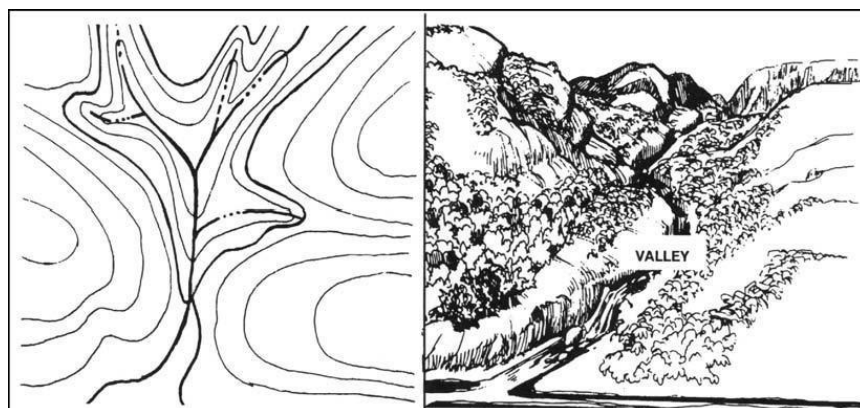


Figure 10-19. Valley.

c. Examining The Same Piece Of Terrain During The Different Seasons Of The Year. In those areas of the world where the seasons are distinctive, a detailed examination of the terrain should be made during each season. The same piece of land does not present the same characteristics during both spring and winter.

(1) During winter, the snow packs the vegetation, delineating the land, making the terrain features appear as clear as they are shown by the contour lines on the map. Ridges, valleys, and saddles are very distinctive.

(2) During spring, the vegetation begins to reappear and grow. New vegetation causes a gradual change of the land to the point that the foliage conceals the terrain features and makes the terrain hard to recognize.

(3) During summer months, the effects are similar to those in the spring.

(4) Fall makes the land appear different with its change of color and gradual loss of vegetation.

(5) During the rainy season, the vegetation is green and thick, and the streams and ponds look like small rivers and lakes. In sparsely vegetated areas, the erosion changes the shape of the land.

(6) During a period of drought, the vegetation dries out and becomes vulnerable to forest fires that change the terrain whenever they occur. Also, during this season, the water levels of streams and lakes drop, adding new dimensions and shape to the existing mapped areas.

d. **SOSSES**. A recommended technique for identifying specific terrain features and then locating them on the map is to use five characteristics known by the mnemonic SOSSES. Terrain features can be examined, described, and compared with each other and with corresponding map contour patterns in terms of their shapes, orientations, sizes, elevations, and slopes. Through practice, you can learn to identify several individual terrain features in the field and see how they vary in appearance.

(1) Shape. Shape is the general form or outline of the feature at its base.

(2) Orientation. Orientation is the general trend or direction of a feature from your viewpoint. A feature can be in line, across, or at an angle to your viewpoint.

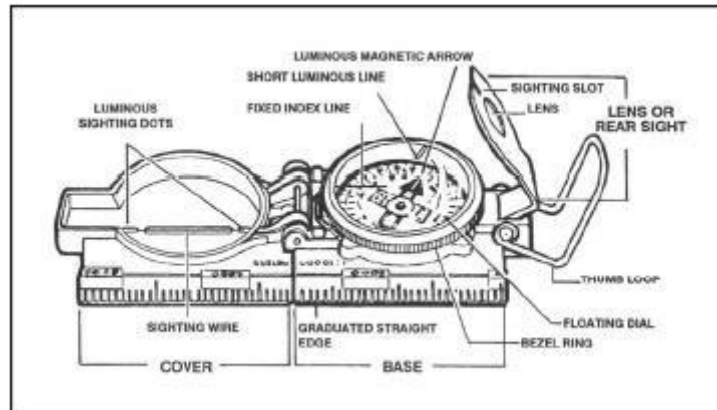
(3) Size. Size is the length or width of a feature horizontally across its base. For example, one terrain feature might be larger or smaller than another.

(4) Elevation. Elevation is the height of a terrain feature. This can be described either in absolute or relative terms as compared to the other features in the area. One landform may be higher, lower, deeper, or shallower than another.

(5) Slope. Slope is the type (uniform, convex, or concave) and steepness or angle (steep or gentle) of the sides of a terrain feature.

7. COMPASS. (0300-PAT-1001)

The lensatic compass is the most common and simplest instrument for measuring direction. A protractor can be used to determine azimuths when a compass is not available. However, it should be noted that when using the protractor on a map, only grid azimuths are obtained. The lensatic compass consists of three major parts: the cover, the base, and the lens.



Lensatic compass.

a. **Cover.** The compass cover protects the floating dial. The cover contains the sighting wire (front sight) and two luminous sighting slots or dots used for night navigation.

b. **Base.** The base of the compass contains the following movable parts:

(1) The floating dial is mounted on a pivot so it can rotate freely when the compass is held level. Printed on the dial in luminous figures are an arrow and the letters E and W. The arrow always points to magnetic north and the letters fall at east (E) 90 degrees and west (W) 270 degrees on the dial. There are two scales; the outer scale denotes mils and the inner scale (normally in red) denotes degrees.

(2) Encasing the floating dial is a glass containing a fixed black index line.

(3) The bezel ring is a ratchet device that clicks when turned. It contains 120 clicks when rotated fully; each click is equal to 3 degrees. A short luminous line that is used in conjunction with the north-seeking arrow during navigation is contained in the glass face of the bezel ring.

(4) The thumb loop is attached to the base of the compass.

c. **Lens.** The lens is used to read the dial, and it contains the rear-sight slot used in conjunction with the front for sighting on objects. The rear sight also serves as a lock and clamps the dial when closed for its protection. The rear sight must be opened more than 45 degrees to allow the dial to float freely. When opened, the straight edge on the left side of the compass has a coordinate scale; the scale is 1:50,000 in newer compasses. Some older compasses will have a 1:25,000 scale. This scale can be used with a 1:50,000-scale map, but the values read must be halved. Check the scale.

d. **Inspection.** A detailed inspection is required when first obtaining and using a compass. One of the most important parts to check is the floating dial, which contains the magnetic needle. The user must also make sure the sighting wire is straight, the glass and crystal parts are not broken, the numbers on the dial are readable, and most important, that the dial does not stick.

e. **Effects Of Metal And Electricity.** Metal objects and electrical sources can affect the performance of a compass. However, nonmagnetic metals and alloys do not affect compass readings. The following separation distances are suggested to ensure proper functioning of a compass:

(1) High-tension power lines	55 meters.
(2) Field gun, truck, or tank	18 meters.
(3) Telephone wires and barbed wire	10 meters.
(4) Machine gun	2 meters.
(5) Steel helmet or rifle	1/2 meter.

f. **Accuracy.** A compass in good working condition is very accurate. However, a compass must be checked periodically on a known line of direction, such as a surveyed azimuth, using a declination station. Compasses with more than 3 degrees variation should not be used.

g. **Protection.** If traveling with the compass unfolded, make sure the rear sight is fully folded down onto the bezel ring. This will lock the floating dial and prevent vibration, as well as protect the crystal and rear sight from damage.

h. **Using A Compass.** Magnetic azimuths are determined using magnetic instruments such as lensatic and M2 compasses. Employ the following techniques when using the lensatic compass.

(1) **Using The Centerhold Technique.** First, open the compass to its fullest so that the cover forms a straightedge with the base. Move the lens (rear sight) to the rearmost position, allowing the dial to float freely. Next, place your thumb through the thumb loop, form a steady base with your third and fourth fingers, and extend your index finger along the side of the compass. Place the thumb of the other hand between the lens (rear sight) and the bezel ring; extend the index finger along the remaining side of the compass, and the remaining fingers around the fingers of the other hand. Pull your elbows firmly into your sides; this will place the compass between your chin and your belt. To measure an azimuth, simply turn your entire body toward the object, pointing the compass cover directly at the object. Once you are pointing at the object, look down and read the azimuth from beneath the fixed black index line (Figure 9-2). This method is faster and easier to use over sighting. It can be used under all conditions of visibility. It can be used when navigating over any type of terrain. It can be used without putting down the rifle; however, the rifle must be slung well back over either shoulder. It can be used without removing eyeglasses.

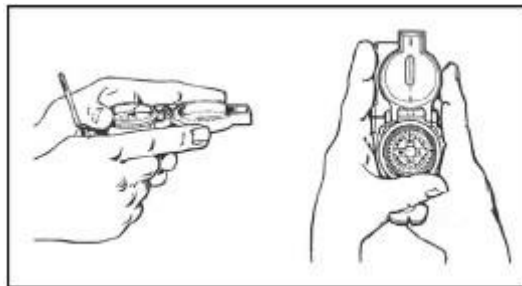
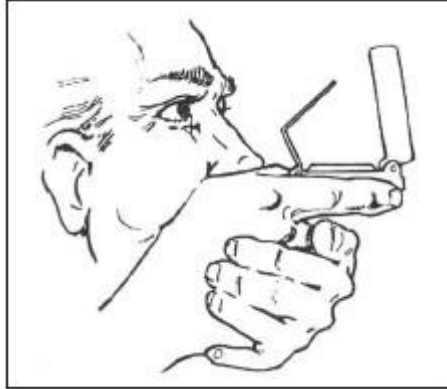


Figure 9-2. Centerhold technique.



Compass-to-cheek technique.

(2) Using The Compass-To-Cheek Technique. Fold the cover of the compass containing the sighting wire to a vertical position; then fold the rear sight slightly forward. Look through the rear-sight slot and align the front-sight hairline with the desired object in the distance. Glance down at the dial through the eye lens to read the azimuth (Figure 9-3). The compass-to-cheek technique is used almost exclusively for sighting, and it is the best technique for this purpose.

(3) Presetting A Compass And Following An Azimuth. Although different models of the lensatic compass vary somewhat in the details of their use, the principles are the same.

(a) During daylight hours or with a light source, hold the compass level in the palm of the hand. Rotate it until the desired azimuth falls under the fixed black index line, maintaining the azimuth as prescribed. Turn the bezel ring until the luminous line is aligned with the north-seeking arrow. Once the alignment is obtained, the compass is preset. To follow an azimuth, assume the centerhold technique and turn your body until the north-seeking arrow is aligned with the luminous line. Proceed forward in the direction of the front cover's sighting wire, which is aligned with the fixed black index line that contains the desired azimuth.

(b) During limited visibility, an azimuth may be set on the compass by the click method. Remember that the bezel ring contains 3-degree intervals (clicks). Rotate the bezel ring until the luminous line is over the fixed black index line. Find the desired azimuth and divide it by three. The result is the number of clicks that you must rotate the bezel ring.

Count the desired number of clicks. If the desired azimuth is smaller than 180 degrees, the number of clicks on the bezel ring should be counted in a counterclockwise direction. For example, the desired azimuth is 51 degrees; $51 \text{ degrees} \div 3 = 17$ clicks counterclockwise. If the desired azimuth is larger than 180 degrees, subtract the number of degrees from 360 degrees and divide by 3 to obtain the number of clicks. Count them in a clockwise direction. For example, the desired azimuth is 330 degrees; $360 \text{ degrees} - 330 \text{ degrees} = 30 \div 3 = 10$ clicks clockwise. With the compass preset, assume a centerhold technique and rotate your body until the north-seeking arrow is aligned with the luminous line on the bezel. Proceed forward in the direction of the front cover's luminous dots, which are aligned with the fixed black index line containing the azimuth. When the compass is to be used in darkness, an initial azimuth should be set while light is still available, if possible. With the initial azimuth as a base, any other azimuth that is a multiple of three can be established using the clicking feature of the bezel ring. Sometimes the desired azimuth is not exactly divisible by three, causing an option of rounding up or rounding down. Rounding up causes an increase in the value of the azimuth, and the object is to be found on the left. Rounding down causes a decrease in the value of the azimuth, and the object is to be found on the right.

8. NAVIGATION WITH A MAP AND COMPASS. (0300-PAT-1003)

When using the protractor, the base line is always oriented parallel to a north-south grid line. The 0 or 360-degree mark is always toward the top or north on the map and the 90-degree mark is to the right.

a. To determine the grid azimuth, draw a line connecting the two points (A and B). Place the index of the protractor at the point where the drawn line crosses a vertical (north-south) grid line. Keeping the index at this point, align the 0 to 180-degree line of the protractor on the vertical grid line. Read the value of the angle from the scale; this is the grid azimuth from point A to point B.

b. To plot an azimuth from a known point on a map convert the azimuth from magnetic to grid, if necessary. Place the protractor on the map with the index mark at the center of mass of the known point and the base line parallel to a north-south grid line. Make a mark on the map at the desired azimuth.

Remove the protractor and draw a line connecting the known point and the mark on the map. This is the grid direction line (azimuth). When measuring an azimuth, the reading is always to the nearest degree or 10 mils. Distance does not change an accurately measured azimuth.

c. To obtain an accurate reading with the protractor (to the nearest degree or 10 mils) place the protractor index where the azimuth line cuts a north-south grid line, aligning the base line of the protractor directly over the intersection of the azimuth line with the north-south grid line. The user should be able to determine whether the initial azimuth reading was correct.

(1) The user should re-read the azimuth between the azimuth and north-south grid line to check the initial azimuth. Note that the protractor is cut at both the top and bottom by the same north-south gridline. Count the number of degrees from the 0-degree mark at the top of the protractor to this north-south grid line and then count the number of degrees from the 180-degree mark at the bottom of the protractor to this same grid line. If the two counts are equal, the protractor is properly aligned.

d. **Resection**. Resection is the method of locating one's position on a map by determining the grid azimuth to at least two well-defined locations that can be pinpointed on the map. For greater accuracy, the desired method of resection would be to use three or more well-defined locations.

(1) **Map And Compass**. When using the map and compass method orient the map using the compass. Identify two or three known distant locations on the ground and mark them on the map. Measure the magnetic azimuth to one of the known positions from your location using a compass. Convert the magnetic azimuth to a grid azimuth. Convert the grid azimuth to a back azimuth. Using a protractor, draw a line for the back azimuth on the map from the known position back toward your unknown position. Repeat for second position and a third position, if desired. The intersection of the lines is your location. Determine the grid coordinates to the desired accuracy.

(2) **Straight Edge**. When using the straightedge method orient the map on a flat surface by the terrain association method. Locate at least two known distant locations or prominent features on the ground and mark them on the map. Lay

a straightedge on the map using a known position as a pivot point. Rotate the straightedge until the known position on the map is aligned with the known position on the ground. Draw a line along the straightedge away from the known position on the ground toward your position. Repeat using a second known position. The intersection of the lines on the map is your location. Determine the grid coordinates to the desired accuracy.

d. **Offset.** A deliberate offset is a planned magnetic deviation to the right or left of an azimuth to an objective. Use it when the objective is located along or in the vicinity of a linear feature such as a road or stream. Because of errors in the compass or in map reading, the linear feature may be reached without knowing whether the objective lies to the right or left.

A deliberate offset by a known number of degrees in a known direction compensates for possible errors and ensures that upon reaching the linear feature, the user knows whether to go right or left to reach the objective. Ten degrees is an adequate offset for most tactical uses. Each degree offset moves the course about 18 meters to the right or left for each 1,000 meters traveled.

e. **Orientation Of The Map.** The first step for a navigator in the field is orienting the map. A map is oriented when it is in a horizontal position with its north and south corresponding to the north and south on the ground. Some orienting techniques are described herein.

(1) **Using A Compass.** When orienting a map with a compass, remember that the compass measures magnetic azimuths. Since the magnetic arrow points to magnetic north, pay special attention to the declination diagram. Determine the direction of the declination and its value from the declination diagram.

(a) With the map in a horizontal position, take the straightedge on the left side of the compass and place it alongside the north-south grid line with the cover of the compass pointing toward the top of the map. This procedure places the fixed black index line of the compass parallel to north-south grid lines of the map.

(b) Keeping the compass aligned as directed above, rotate the map and compass together until the magnetic arrow

is below the fixed black index line on the compass. At this time, the map is close to being oriented.

(c) Rotate the map and compass in the direction of the declination diagram.

(d) If the magnetic north arrow on the map is to the left of the grid north, check the compass reading to see if it equals the G-M angle given in the declination diagram. The map is then oriented. If the magnetic north is to the right of grid north, check the compass reading to see if it equals 360 degrees minus the G-M angle.

(2) Using Terrain Association. A map can be oriented by terrain association when a compass is not available or when the user must make many quick references as he moves across country. Using this method requires careful examination of the map and the ground, and the user must know his approximate location.

f. **Moving By Dead Reckoning.** Dead reckoning consists of two fundamental steps. The first is the use of a protractor and graphic scales to determine the direction and distance from one point to another on a map. The second step is the use of a compass and some means of measuring distance to apply this information on the ground. In other words, it begins with the determination of a polar coordinate on a map and ends with the act of finding it on the ground.

(1) During daylight, across open country, along a specified magnetic azimuth, never walk with the compass in the open position and in front of you. Because the compass will not stay steady or level, it does not give an accurate reading when held or used this way. Begin at the start point and face with the compass in the proper direction, then sight in on a landmark that is located on the correct azimuth to be followed. Close the compass and proceed to that landmark. Repeat the process as many times as necessary to complete the straight-line segment of the route.

(2) The landmarks selected for this purpose are called *steering marks*, and their selection is crucial to success in dead reckoning. Steering marks should never be determined from a map study. They are selected as the march progresses and are commonly on or near the highest points visible along the azimuth line you are following when they are selected. They

may be uniquely shaped trees, rocks, hilltops, posts, towers, and buildings—anything that can be easily identified. If you do not see a good steering mark to the front, you might use a back azimuth to some feature behind you until a good steering mark appears out in front. If several easily distinguished objects appear along your line of march, the best steering mark is the most distant object. This procedure enables you to travel farther with fewer references to the compass. If you have many options, select the highest object. A higher mark is not as easily lost to sight as is a lower mark that blends into the background as you approach it. A steering mark should be continuously visible as you move toward it. Steering marks selected at night must have even more unique shapes than those selected during daylight. As darkness approaches, colors disappear, and objects appear as black or gray silhouettes. Instead of seeing shapes, you begin to see only the general outlines that may appear to change as you move and see the objects from slightly different angles.

(3) Dead reckoning, without natural steering marks, is used when the area through which you are traveling is devoid of features; or when visibility is poor. At night, it may be necessary to send a member of the unit out in front of your position to create your own steering mark in order to proceed. His position should be as far out as possible to reduce the number of chances for error as you move. Arm-and-hand signals or a radio may be used in placing him on the correct azimuth. After he has been properly located, move forward to his position and repeat the process until some steering marks can be identified or until you reach your objective.

(4) When an obstacle forces you to leave your original line of march and take up a parallel one, always return to the original line as soon as the terrain or situation permits by following bypass procedures **right add, left subtract**. To turn clockwise (right) 90 degrees, you must add 90 degrees to your original azimuth. To turn counterclockwise (left) 90 degrees from your current direction, you must subtract 90 degrees from your present azimuth. When making a detour, be certain that only paces taken toward the final destination are counted as part of your forward progress. They should not be confused with the local pacing that takes place perpendicular to the route in order to avoid the problem area and in returning to the original line of march after the obstacle has been passed.

g. **Moving By Terrain Association.** The technique of moving by terrain association is more forgiving of mistakes and far less time-consuming than dead reckoning. It best suits those situations that call for movement from one area to another. Once an error has been made in dead reckoning, you are off the track. Errors made using terrain association are easily corrected, however, because you are comparing what you expected to see from the map to what you do see on the ground. Errors are anticipated and will not go unchecked. You can easily make adjustments based upon what you encounter. After all, you do not find the neighborhood grocery store by dead reckoning; you adjust your movements according to the familiar landmarks you encounter along the way.

(1) Identifying And Locating Selected Features. Being able to identify and locate the selected features, both on the map and on the ground, are essential to the success in moving by terrain association. The following rules may prove helpful. Be certain the map is properly oriented when moving along the route and use the terrain and other features as guides. The orientation of the map must match the terrain, or it can cause confusion. To locate and identify features being used to guide the movement, look for the steepness and shape of the slopes, the relative elevations of the various features, and the directional orientations in relation to your position and to the position of the other features you can see. Make use of the additional cues provided by hydrography, culture, and vegetation. All the information you can gather will assist you in making the move. The ultimate test and the best practice for this movement technique is to go out in the field and use it. The use of terrain, other natural features, and any man-made objects that appear both on the map and on the ground must be practiced at every opportunity. There is no other way to learn or retain this skill.

(2) Using Handrails, Catching Features, And Navigational Attack Points. First, because it is difficult to dead reckon without error over long distances with your compass, the alert navigator can often gain assistance from the terrain.

(a) Handrails are linear features like roads or highways, railroads, power transmission lines, ridgelines, or streams that run roughly parallel to your direction of travel. Instead of using precision compass work, you can rough compass without the use of steering marks for as long as the feature

travels with you on your right or left. It acts as a handrail to guide the way.

(b) Second, when you reach the point where either your route or the handrail changes direction, you must be aware that it is time to go your separate ways. Some prominent feature located near this point is selected to provide this warning. This is called a *catching feature*; it can also be used to tell you when you have gone too far.

(c) Third, the catching feature may also be your navigational attack point; this point is the place where area navigation ends, and point navigation begins. From this last easily identified checkpoint, the navigator moves cautiously and precisely along a given azimuth for a specified distance to locate the final objective. The selection of this navigational attack point is important. 500 meters or less is most desirable.

h. **Combination Of Techniques**. The most successful navigation is obtained by combining the techniques described above. Constant orientation of the map and continuous observation of the terrain in conjunction with compass-read azimuths, and distance traveled on the ground compared with map distance, used together make reaching a destination more certain. One should not depend entirely on compass navigation or map navigation; either or both could be lost or destroyed.

PERFORMANCE EXAMINATION CHECKLIST

0300-PAT-1001

Given a lensatic compass, a surveyed point with a level platform, an azimuth marker, and a surveyed known direction, determine the error in a lensatic compass to within three (3) degrees.

Student Instructions:

1. You are a Marine and must determine the error in a lensatic compass.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and be within three (3) degrees.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Remove all magnetic attractions.			
a. Identify magnetic attractions.			
2. Place compass at survey point.			
3. Sight in on azimuth marker.			
a. Prepare the compass for use.			
b. Execute compass hold techniques, as required.			
4. Calculate error.			
a. Read the compass.			
b. Determine error in a compass.			
5. Record error on compass.			

0300-PAT-1003

Given periods of daylight or darkness, a lensatic compass, map, and designated objectives, while wearing a fighting load, navigate with a map and compass to arrive at each designated objective.

Student Instructions:

1. You are a Marine and must navigate with a map and compass.
2. There is a time limit of three hours associated with this task.
3. The performance checklist is used as a guide for execution of this event. To achieve mastery, you must locate 3 of 5 designated objectives.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Plan route.			
a. Plot grid coordinates.			
b. Determine straight line distance.			
c. Determine curved line distance.			
d. Calculate a back azimuth.			
e. Prepare a route card.			
2. Determine pace count for different terrain.			
3. Orient map.			

a. Determine the straight edge of a lensatic compass.			
4. Adjust compass for conditions, as required.			
5. Follow azimuth for set distance.			
6. Perform deliberate offset, as required.			
a. Add or subtract ten degrees from your magnetic azimuth.			
7. Perform resection, as required.			
a. Orient the map using the compass.			
b. Identify two or three known distant locations on the ground and mark them on the map.			
c. Measure the magnetic azimuth to one of the known positions from your location using a compass.			
d. Convert the magnetic azimuth to a grid azimuth.			
e. Convert the grid azimuth to a back azimuth. Using a protractor, draw a line for the back azimuth on the map from the known position back toward your unknown position.			
f. Repeat c, d, and e for a second position and a third position, if desired.			
g. The intersection of the lines is your location. Determine the grid coordinates to the desired accuracy.			
8. Report objectives, as required.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
TC 3-25.26	Map Reading and Land Navigation	Entire Manual

NOTES :

STUDENT OUTLINE

OFFENSIVE/PATROLLING FUNDAMENTALS

MCT0403

06/28/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given an individual weapon, while wearing a fighting load, perform individual movement techniques to arrive at the objective. (0300-PAT-1005)

(2) Given a patrol order, assigned weapon, and an assignment in a patrol, while wearing a fighting load, perform individual actions in a patrol without compromising the integrity of the patrol. (0300-PAT-1008)

(3) Given a patrol order, assigned weapon, and an assignment in a patrol, while wearing a fighting load, perform immediate actions to negate the threat. (0300-PAT-1009)

b. ENABLING LEARNING OBJECTIVES.

(1) Give a list of choices, identify fire command terms in accordance with MCRP 3-10A.3. (0300-PAT-1005a)

(2) Give a list of choices, identify fire team roles in offensive operations in accordance with MCRP 3-10A.3. (0300-PAT-1005b)

(3) Given a list of choices, identify the types of patrols in accordance with MCTP 3-01A. (0300-PAT-1008a)

(4) Given a list of choices, identify the definitions of patrol control measures in accordance with MCTP 3-01A. (0300-PAT-1008b)

STUDENT OUTLINE

OVERVIEW: The purpose of this lesson is to provide you with the skills necessary to prepare for and perform individual actions during a patrol. During this class we will discuss: Types of

Patrols, Patrol Organization, Control Measures, Preparation and Inspections, Exiting Friendly Lines, Individual Actions, Danger Areas, Reentry of Friendly Lines and Reporting Information. This lesson will tie-in with other lessons you have either already received or will receive such as Hand and Arm Signals and Land Navigation.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

PATROLLING I. (0300-PAT-1008a)

1. **DEFINITION.** A patrol is a detachment of ground, sea, or air forces sent out for the purpose of gathering information, carrying out destructive, harassing, mopping-up, or security missions. The mission to conduct a patrol may be given to a fire team, squad, platoon, or company.

2. **THE PURPOSE OF PATROLLING.** A commander must have current information about the enemy and the terrain to employ the unit effectively. Patrols are an important means of gaining this information. They may also be used to destroy enemy installations, capture enemy personnel, perform security missions, maintain contact with friendly units, or to prevent the enemy from gaining information. Patrols are classified by mission and means of movement.

3. **PATROLS BY MISSION.** There are two types of patrols when classified by mission: reconnaissance patrols and combat patrols.

a. **Reconnaissance Patrols.** Reconnaissance patrols gather information about the enemy, terrain, or resources. Relying on stealth rather than combat strength, they gather information and fight only when necessary. There are three types of reconnaissance patrols: route, area, and zone. The acronym **RAZ** is used to remember the types of reconnaissance patrols.

(1) **Route.** A route reconnaissance is used to obtain detailed information of a specified route and all terrain from which the enemy could influence movement before friendly units use the route. It is focused along a specific line of communications such as a road, railway, or waterway to provide new or updated information on route conditions and activities along the route.

(2) Area. An area reconnaissance is a directed effort to obtain detailed information concerning the terrain or enemy activity within a prescribed area such as a town, ridgeline, woods or other features critical to operations.

(3) Zone. A zone reconnaissance is a directed effort to obtain detailed information concerning all routes, obstacles, terrain, and enemy forces within a zone defined by boundaries.

b. **Combat Patrols**. A combat patrol is a fighting patrol. Because the patrol is assigned a mission that may require it to engage the enemy, a combat patrol is stronger and more heavily armed than a reconnaissance patrol. A combat patrol is assigned the mission to destroy enemy troops, equipment, or installations; capture enemy documents, equipment, or installations; and as a secondary responsibility, gather information. There are five basic types of combat patrols. The acronym used to help remember the types of combat patrols is "**CARS**." The five types of combat patrols are:

(1) Raid. A raid is a patrol that executes a limited objective, surprise attack on the enemy and then conducts a planned withdrawal after accomplishing its mission. Raids destroy or capture enemy personnel or equipment, destroy installations, or free friendly personnel. Surprise, firepower, and violence of action are the keys to a successful raid.

(2) Ambush. An ambush is a surprise attack from a concealed position upon a moving or temporarily halted target such as enemy patrols, re-supply columns, and convoys. Ambush patrols are executed to destroy the enemy. The ambush may include an assault to close with and decisively engage the enemy, or the attack may be by fire only. Surprise, firepower, and violence of action are the keys to a successful ambush.

(3) Contact. A contact patrol establishes and maintains contact with the front, flanks, or rear of either a friendly or enemy force. One offensive fundamental is to gain and maintain contact with the enemy through direct and/or indirect fires or observation, and avoid decisive engagement with the enemy.

(4) Security. Security patrols are assigned missions that may or may not require them to engage the enemy. They are used in proximity to defensive positions, on the flanks of advancing units, or in rear areas. The purposes of security patrols are to detect infiltration by the enemy, destroy

infiltrators, and protect against surprise and ambush. Security patrols are the most common type of combat patrol.

4. **PATROL ORGANIZATION**. The major subdivisions of reconnaissance and combat patrols are called elements. Elements can be fire teams, squads, or entire platoons.

a. **Task Organization**. Patrol elements can be assigned as teams with specific tasks. Some examples of special tasks are: casevac, EPW, and Tactical Site Exploitation (TSE). It is imperative that all the patrol members know how to perform the task assigned to all members of the patrol so that the patrol's mission is not put in jeopardy with the loss of a couple of key members, a team, or an entire element.

b. **Individual Tasks**. Leading a patrol is a very demanding task. The Patrol Leader may assign patrol members individual tasks to assist in conducting the patrol. Some common individual tasks you may be assigned are:

(1) **Assistant Patrol Leader (APL)**. The Assistant Patrol Leader assists the Patrol Leader in patrol preparation, navigation, rehearsals and takes charge in the absence of the patrol leader. The APL is responsible for accountability throughout the patrol and getting head counts during halts or after crossing danger areas. Upon consolidation of the objective, the APL reports the ammunition, casualty, and equipment statuses to the PL.

(2) **Radio Operator (RTO)**. The radio operator maintains communication with the command post at all times and reports all incoming transmissions to the patrol leader. RTO must know brevity Codes, call signs, and frequencies associated with the patrol.

(3) **Navigator**. The navigator should know the patrol's location at all times and maintains the direction of movement in accordance with the patrol route. The navigator must know the routes and checkpoints associated with the patrol.

(4) **Pace Man**. The two pace men assist the patrol leader in determining the distance the patrol has traveled. They must know the checkpoints and distance between checkpoints associated with the patrol. The pace men should be able to notify the navigator and PL the distance covered at all times.

(5) Point. The point is responsible for investigating the route immediately to the front of the patrol. He moves as far ahead of the patrol as visibility and terrain permit, up to about 100m. The point will travel left and right ahead of the patrol searching the area that the patrol will pass. He is directed where to go by the patrol leader and the navigator.

5. **CONTROL MEASURES**. Control measures are used as means of controlling the movement of a patrol and aid the patrol leader in keeping the patrol organized. The different control measures are checkpoints and rally points.

a. **Checkpoints**. A checkpoint is a predetermined point on the ground used as a means of controlling movement or reference for location. Checkpoints are a means of control between the parent unit and the patrol. These locations are decided upon and coordinated before the patrol leaves, so that both the patrol members and the parent unit will know where the patrol is when the patrol reports into the parent unit.

b. **Rally Points**. A rally point is an easily identifiable point on the ground where units can reassemble and reorganize if they become dispersed. It should provide cover and concealment, be defensible for at least a short time, and be easily recognized and known to all patrol members. Rally points should be located every three to five hundred meters and on the near and far side of danger areas. If the patrol gets dispersed due to enemy contact or another reason, the patrol needs to know what to do at rally points. There are three types of rally points.

(1) Initial Rally Point (IRP). The Initial Rally Point is within friendly lines where the patrol can rally if it becomes separated departing the friendly area or before reaching the first en route rally point. It may be the assembly area where the patrol waits before exiting friendly lines.

(2) En Route Rally Point. These are rallying points between the initial rally point and the objective rally point as well as from the objective rally point back to the point where the patrol reenters friendly lines. They are determined as the patrol passes through a likely area that is suitable for a rally point.

(3) Objective Rally Point (ORP). The ORP is located nearest the objective where the patrol makes final preparations prior to approaching the objective. It also serves as a location where the patrol reassembles after completing actions on the objective.

(4) Contact Points. An easily identifiable point on the ground where two or more units make contact with one another; contact can be either visual or physical.

6. PREPARATION AND INSPECTIONS.

a. Warning Order. The PL will issue a warning order. Use the details to begin your own preparation.

b. Pre-Combat Checks (PCC). This is the first inspection before the patrol begins that ensures completeness and correctness of uniform, gear and equipment.

c. Rehearsals. Rehearsals ensure the operational proficiency of the patrol and are used to test the soundness of the patrol order and patrol organization. All aspects of the patrol should be rehearsed.

d. Order. The PL will deliver the patrol order in the standard five paragraph format. Pay particular attention to the control measures and copy them onto your map.

e. Pre-Combat Inspections (PCI). This inspection allows the PL to ensure that each Marine understands the mission and what they have to do.

7. EXITING FRIENDLY LINES. There is a process to depart friendly lines that ensures all friendly units are aware of the patrol leaving and prevents the patrol from accidentally setting off any early warning devices.

a. Forward Unit Coordination. The patrol leader or assistant patrol leader moves the patrol to the Assembly Area. When leaving friendly lines the patrol must be careful of friendly fields of fire and obstacles. The forward unit coordinator will tell the patrol about these and any last minute updates, and provide a guide to take the patrol out of friendly lines.

b. Passage Point. The passage point is where the patrol actually leaves friendly lines. The patrol will follow the guide single file through the passage point and around friendly obstacles. Accountability is checked by the PL and APL as the Marines go through the passage point.

c. Initial Rally Point (IRP). If the patrol becomes dispersed or takes enemy contact before getting to the release

point, Marines move to the IRP to reassemble and reorganize. The IRP will be just inside friendly lines.

d. **Release Point.** The Rally Point is located outside the effects of friendly direct fire weapons and is where the guide departs the patrol to return to friendly lines. The PL and APL check accountability again and the patrol gets into its formation and moves out.

8. **INDIVIDUAL ACTIONS.**

a. **Movement.**

(1) **Situational Awareness.** Marines must pay close attention to what the patrol is doing and what is going on around them. All members of the patrol should follow a general cycle in which they check their sector of fire, their team leader, and the Marine behind them every two to three steps. This makes sure that you are able to maintain visual contact with the other Marines, see and relay hand and arm signals, and watch for the enemy.

(2) **Dispersion.** It is dangerous to bunch together on a patrol; it provides the enemy with an easy target and causes multiple Marines to be injured by a single explosion. On patrol, Marines should stay as far apart as terrain and vegetation allow, while still being controllable by the PL. Also, by spreading out, the patrol has a wider range of observation and can more easily find the enemy.

(3) **GOTWA.** Anytime the PL leaves the patrol, he will leave a 5-point contingency plan (GOTWA) with the next senior Marine in charge.

(a) Where he is **G**oing.

(b) **O**thers going with him.

(c) **T**ime he will be back.

(d) **W**hat to do if he is not back by that time.

(e) **A**ctions on enemy contact.

b. **Security.**

(1) Individual Security Measures. There are many things that a Marine can do to improve the security of the patrol and avoid detection by the enemy. The terrain will be a major factor in what a Marine does and things that work in one environment may not work in another. Some basic things you must do:

(a) Avoid "sky lining" yourself on top of a ridge, hill, or building.

(b) Avoid roads and trails.

(c) Avoid open woods and clearings.

(d) Communicate with hand and arm signals.

(e) Maintain noise and light discipline.

(2) Sectors of Fire. Each Marine is responsible for observing their sector of fire. These can shift depending on the type of formation used. The last Marines in the patrol are responsible for the sector of fire directly to the patrol's rear. An interval between the member assigned as rear security and the last Marine of the patrol is maintained at the limit of visibility, up to 50 meters.

(3) Security Halts. The patrol occasionally halts to observe for enemy activities or movements. This is called a security halt. Upon signal, when reaching a danger area and periodically throughout the conduct of the patrol, every member freezes in place, remains quiet, observes, and listens.

(a) Short Security Halt. When you see the hand and arm signal for "halt" or "freeze", stop in place and face outward. Conduct SLLS and periodically look to your team leader or PL.

(b) Long Security Halt. When the PL signals for a long security halt, move to a position of cover and concealment and establish 360 degree security. Conduct SLLS and periodically look to your team leader or PL. Check accountability when you get the signal to get up and move out. When moving out from a security halt, Marines will pick up one at a time rather than the entire patrol standing at the same time.

(c) SLLS. Any time a Marine halts for any length of time he must actively observe the area around him.

1. Stop: Don't move. The enemy could see or hear your movements.

2. Look: Scan your sector of fire.

3. Listen: For sounds of the enemy. This can be talking, moving, equipment, running, etc.

4. Smell: Humans make distinct smells. Things that can stand out are food, soap, vehicle exhaust, and cigarette smoke.

c. Gathering Information. The patrol is the eyes and ears of the commander. Constantly scan for the enemy or signs of him. If you see something you think is important, signal to halt the patrol and for the PL to come to you. Send a SALUTE report via radio if you have spotted the enemy.

9. DANGER AREAS.

a. Definition. Any area where the patrol is vulnerable to enemy observation or fire is a danger area. These can include open areas, roads, trails, enemy obstacles, enemy positions, minefields, villages, etc. Patrols must minimize the amount of time they are in a danger area.

b. Crossing A Danger Area. Patrols will try to avoid danger areas if possible, but sometimes have to go through them to accomplish the mission. Every danger area is different, but there are general principles to crossing one.

(1) Near Side Security. The PL will recon the danger area and set Marines as security on the near side.

(2) Far Side Security. Once near side security is established, the PL will send Marines (usually a pair) across the danger area to recon the far side. They will check for the enemy and identify a rally point and any additional hazards or danger areas. Once the far side recon is complete, they will signal the PL and establish far side security.

(3) Crossing. Once far side security is set, your PL will direct how and when the patrol will cross. Marines could

cross all at once, in teams, by pairs, or individually. They may have to run quickly or crawl slowly. Every danger area is different.

10. **Reentry Of Friendly Lines.** Reentry must be a deliberate process so that Marines in the defense do not engage your patrol and so that the enemy does not sneak in with you.

(a) **Reentry Rally Point.** The PL will call a long security halt at a rally point just outside the effects of friendly weapons in the defense. He will direct the radio operator to call and request to reenter friendly lines.

(b) **Recognition Signal.** The PL or designated Marine will move to the contact point and give the recognition signal.

(c) **Movement From Contact Point To Passage Point.** The forward unit coordinator will send a guide to your patrol to take you back through the friendly obstacles. The patrol will follow him in a single file line. The PL and APL will check accountability before leaving the reentry rally point and when the patrol goes through the passage point.

11. **REPORTING INFORMATION.** Immediately after the patrol all patrol members will be debriefed by the PL and a representative of the command. A commander often acts on information furnished by patrols. This makes it critical that each Marine on a patrol be able to accurately communicate observations made while on patrol. Report everything you see, even if you don't think it's important. The more information a commander has the better. Remember: you are his eyes and ears!

LOOK AHEAD: Our next period of instruction will cover actions upon enemy contact and offense. It will utilize the knowledge gained from this period of instruction to build a working knowledge in order to prepare yourself to execute a patrol in a combat environment.

PART TWO

STUDENT OUTLINE

OVERVIEW: This is a continuation of your lesson on Offensive/Patrolling Fundamentals. The purpose of this lesson is to provide you with the skills necessary to conduct a patrol from beginning to end. During this class we will discuss: individual action upon enemy contact and motorized patrols. This lesson will tie-in with other lessons you have either already received or will receive such as Offensive Fundamentals, Hand and Arm Signals, and Land Navigation.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **IMMEDIATE ACTIONS DURING A FOOT PATROL.** During a patrol, contact is often unexpected, occurs at very close ranges, and is short in duration. Enemy fire may allow leaders little or no time to evaluate situation or give orders. In these situations, immediate action drills provide a means for swiftly initiating positive offensive or defensive action, as appropriate. It is not feasible to attempt to design an immediate action drill to cover every possible situation. It is better to know the immediate action drill for each of a limited number of situations that are likely to occur during a patrol.

a. **Immediate Halt.** A situation where the patrol detects the enemy but is not detected requires the immediate, in-place halt of the patrol. The first member visually detecting the enemy gives the signal for FREEZE. Every member halts in place, weapon at the ready, and remains absolutely motionless and quiet until further signals or orders are given.

b. **Hasty Ambush.** This immediate action is used to avoid contact and to prepare to initiate an unplanned ambush on the enemy.

(1) When the signal "HASTY AMBUSH" is given (by the point man, patrol leader or another authorized patrol member), the entire patrol moves quickly to the right or left of the line of movement, as indicated by the signal, and takes up the best available concealed firing positions.

(2) The enemy is allowed to advance until he is in the most vulnerable position before the ambush is initiated. The patrol leader initiates the ambush by opening fire and shouting, "FIRE".

(3) If the patrol is detected before this, the first member aware of detection initiates the ambush by firing and shouting. An alternate means for initiating the ambush is to designate an individual, for example, point man or the last member, to open fire when a certain portion of the enemy unit reaches or passes that member. Initiate using a closed-bolt weapon.

c. **Immediate Assault.** This immediate action drill is used defensively to make and quickly break undesired but unavoidable contact (including ambush) and offensively to decisively engage the enemy.

(1) When the enemy is encountered, the Marines nearest the enemy hit the deck, open fire, and shout, "CONTACT," followed by the direction of the incoming attack: FRONT, LEFT, REAR or RIGHT.

(2) The patrol moves swiftly into line formation and assaults by fire and movement.

d. **Break Contact.** This immediate action drill is used to get away from the enemy while in contact.

(1) The patrol leader will shout "BREAK CONTACT" followed by a direction and distance. The direction will be communicated using the clock method; twelve o'clock is the direction of movement of the patrol. For example: "TEN O'CLOCK-TWO HUNDRED," means move in the direction of ten o'clock for 200m.

(2) One portion of the patrol returns fire while another portion moves by bounds away from the enemy. Each portion of the patrol covers the other by fire until they all have broken contact.

e. **React To An Ambush.** In an ambush the kill zone is under very heavy and highly concentrated enemy fires.

(1) The longer you remain in the kill zone, the greater the chance you will be killed. Marines in the kill zone

immediately take whatever cover is available, gain positive identification of the enemy, and return fire.

(2) The PL will direct the patrol to assault the enemy, break contact, or take another appropriate action.

(3) Members not in the kill zone use fire and maneuver against the enemy as directed by the patrol leader.

f. **Indirect Fire Attack.** Indirect fire includes mortars, rockets, and artillery. Patrol members will react in the following manner:

(1) Immediately hit the ground and seek cover.

(2) Maintain security within designated sector of fire.

(3) Respond to Patrol Leader's commands and orders. Be prepared to break contact.

g. **Air Observation.** When an unidentified or known enemy aircraft which may detect the patrol is heard or seen, the appropriate IA drill is Immediate Halt.

h. **Air Attack.** When an aircraft detects the patrol and makes a low level attack, the IA drill for air attack is used.

(1) The first man sighting an attacking aircraft shouts, "Aircraft, front (rear, left, right)."

(2) The patrol moves quickly into line formation, well spread out, at right angles to the aircraft's direction of travel. As each man comes on line, he hits the deck, using available cover. He positions his body at right angles to the aircraft's direction of travel, to present the shallowest target possible.

(3) Between attacks (if the aircraft returns or there is more than one attacking aircraft), patrol members seek better cover.

(4) Attacking aircraft are fired on only on command of the patrol leader.

i. **Contact With A Sniper.** Normally, snipers in all environments have a detailed withdrawal plans. Once a patrol comes into contact with a sniper, the patrol must immediately seek the best covered and concealed position. The element or

team in contact attempts to identify the firing position. The patrol element or team leader in contact sends initial contact report to the patrol leader, who notifies higher headquarters. The element or team leader in contact determines appropriate cut-off positions and relays them to flanking elements or teams. The patrol element or team leader in contact continues to observe the firing point, but does not enter it due to the possibility of booby traps. Flank elements or teams set up along likely escape routes. The incident ends when either the sniper ceases fire or is neutralized.

2. **FIRE AND MOVEMENT CONCEPT.** (MCT-OFF-1001c)

a. **Fire And Maneuver.** Fire and maneuver is the process whereby elements of a unit establish a base of fire to engage the enemy, while another element maneuvers to an advantageous position from which to close with and destroy or capture the enemy. Supporting fires from weapons not organic to the unit may be provided. Supporting fires should be followed closely by the advancing troops of the maneuver unit so that the shock effect of the fire upon the enemy will not be lost.

b. **Fire And Movement.** Once the maneuver element meets enemy opposition and can no longer advance under the cover of the base of fire, it employs fire and movement to continue its forward movement to a position from which it can assault the enemy position. In a maneuvering squad, fire and movement consists of individuals or fire teams providing covering fire while other individuals or fire teams advance toward the enemy or assault the enemy position.

c. **Squad Employment.** The squad is normally employed as part of the rifle platoon and will be assigned a mission as a base of fire or as a maneuver element. Thus, operating as part of the platoon, a squad assigned as the maneuver element will execute fire and movement, not fire and maneuver. A squad will be required to fire and maneuver when, for example, given a mission such as point squad, flank patrol, or flank guard during a movement to contact, enemy contact is made. The organization of the rifle squad into three fire teams provides the squad leader with the ability to execute fire and maneuver with one or two fire teams employed as the base of fire and one or two fire teams as the maneuver element.

d. **Fire Team.** The fire team, as the basic fire unit, is restricted to executing only fire and movement.

e. **Base Of Fire Element.** The base of fire covers the maneuver element's advance toward the enemy position by engaging all known or suspected targets. Upon opening fire, the base of fire seeks to gain fire superiority over the enemy. Fire superiority is gained by subjecting the enemy to fire of such accuracy and volume that the enemy fire ceases or becomes ineffective.

f. **Maneuver Element.** The mission of the maneuver element is to close with and destroy or capture the enemy. It advances and assaults under covering fire of the base of fire element. The maneuver element uses available cover and concealment to the maximum. Depending upon the terrain and effectiveness of the covering fire, the maneuver element advances by team movement; within the team, by fire and movement, employing rushes, or creeping and crawling as necessary. Regardless of how it moves, the maneuver element must continue to advance. If terrain permits, the maneuver element may be able to move forward under cover and concealment to positions within hand grenade range of the enemy.

g. **Control Of The Squad.** Fire team leaders initiate the action directed by the squad leader. In the attack, fire team leaders act as fighter-leaders, controlling their fire teams primarily by example. Fire team members base their actions on the actions of their fire team leader. Throughout the attack, fire team leaders exercise such positive control as is necessary to ensure that their fire teams function as directed. The squad leader locates himself where he can best control and influence the action. In controlling the squad when taken under enemy fire, the squad leader takes into account the fact that the battlefield is a very noisy and confusing place. If enemy fire is light he may be able to control his fire team leaders by voice, whistle, or arm-and-hand signals. As the volume of enemy fire increases, this type of control becomes impossible. In this situation the squad leader must rely on the skill and initiative of the fire team leaders to carry out the instructions he previously gave them. To maintain control of the squad under heavy enemy fire, the squad leader positions himself near the fire team leader of the designated base fire team. By regulating the actions of the base fire team leader, the squad leader retains control of the squad. The base fire team leader controls the actions of his fire team; the other fire team leaders base their actions on those of the base fire team. This type of control must be practiced and perfected in training if the squad is to be effective in combat.

(1) The base fire team is used by the squad leader to control the direction, position, and rate of movement of the squad. It is not intended that the other fire teams maintain rigid positions in relation to the base fire team; the base fire team is used as a general guide. If another fire team can move forward more rapidly than the base fire team, it should do so. For instance, if the base fire team is receiving enemy fire, but the terrain in front of another fire team provides cover from enemy fire, the latter team should move rapidly forward to a position where they can deliver fire on the enemy. Covering the base fire team's movement by fire takes pressure off them and permits them to move forward. Once the base fire team comes generally abreast, the other fire teams can then resume fire and movement.

3. **ASSAULT FIRES.** (MCT-OFF-1001d)

a. Assault fire is designed to keep the enemy fire suppressed, once covering fires are lifted, by fixing the defenders in their fighting positions. Assault fire permits the assaulting squad to close to within hand grenade range of the enemy position without sustaining heavy casualties from enemy small arms fire. The assault is made as rapidly as possible consistent with the ability of individuals to deliver a heavy volume of well-directed fire. The speed of the assault will be governed by the slope and condition of the ground, visibility, and physical condition of the squad. Throughout the assault, fire is directed at every bush or tree stump, every fold in the ground, and every location that might conceivably contain an enemy. Assault fire is characterized by violence, volume, and accuracy. Assault fire is designed to kill and demoralize the enemy, and keep him down until the assault element can overrun the position and kill or capture him.

b. **Suppression.** A tactical mission task that results in temporary degradation of the performance of a force or weapons system below the level needed to accomplish the mission.

4. **INDIVIDUAL MOVEMENT.** (MCT-OFF-1001)

a. We understand that fire and movement commences once covering fires are lifted. Assault fires must now be applied direct front to set conditions for seizure of objective. The fire team will get in the prone on line and establish a base of fire. Once the objective is suppressed, Team leader will initiate movement by running forward, the rest of the team continues assault fires. Team leader will also give fire

commands with an ADDRAC. An ADDRAC is a fire command that contains six basic elements that are always announced or implied. Fire commands for all weapons follow a similar order and include similar elements. The six elements (ADDRAC) of the fire command are: Alert, Direction, Target Description, Range, Target Assignment, and Fire Control. The Team Leader is now the forward man, the Marine on his left will be his aft man. The Fore man now takes cover and fires on the enemy. He is covering the aft man. If possible, Fore man will shout "Set" while firing. Aft man will now announce "moving", quickly moving to the next cover he seen while he was providing assault fire for the fore man. Ensure the momentum continues forward, but consider your route. Verbal communication between pairs is both explicit and implicit. Do not cross into a Marine's line of fire maintain a 15 degree offset. The following steps will assist in the conduct of fire and movement:

b. The acronym that describes Fire and movement at the individual level is SAMK. Suppress, Assess, Move, Kill.

c. **Suppress**. Covering fires must be established in order to allow the Marines buddy the ability to move into the second step. Use the assault fire concept, while keeping in mind the average rate of fire for an M16 employment is 10 to 12 rounds. The Marine must maintain communication by any means possible to allow his buddy to move. This can be done yelling, "SET."

d. **Assess**. Prior to movement a Marine must assess the suppression being put on his team and enemy. He must assess the lay of the ground by assessing micro-terrain, positions of cover and concealment, as well geometry of fires both for friendly and enemy. He must also take into consideration the condition of his weapon system and ammunition. If required, he should reload or conduct corrective action prior to exposing himself to further risk. Your shooting position should not match where you took cover. The team leader will take the initiative and become the forward man for his buddy. He must take into consideration an communication/orders being provided whether explicit or implicit. The Marine is ready to execute the next step when he has observed, orientated to the situation and decided on a route to his next fighting position. The Marine must maintain communication by any means possible to allow his buddy to move. This can be done yelling, "MOVING." If possible, the buddy will reply, "MOVE." When starting from the prone position, raise the head slowly and steadily and select a new position. Lower the head slowly, draw arms inward, cock right leg forward, and prepare to rush.

e. **Move**. When it is time to move, first ensure that your weapon is in condition 1, so that you will be able to suppress when you get to your next fighting position, and on safe so you don't have a negligent discharge.

(1) **Get Up**. Pull your hands in close to your chest, tuck the buttstock under your armpit, and elevate your muzzle to ensure that it doesn't go into the dirt. Pull your strong side leg up and push up with your non firing hand.

(2) **Sprint**. As fast as you can go. You have approximately 3 seconds to get to the fighting position that you identified and get down before an enemy will likely be able to take a well-aimed shot at you. We measure this time by saying, "I'm up, he sees me, I'm down."

(3) **Get Down**. Quickly drop to both knees, pulling the buttstock back under your armpit and elevating the muzzle, and catching yourself with your non-firing hand. Get down, shoulder the weapon, and immediately start suppressing again.

(4) **High Crawl/Low Crawl**. If you need to move a short distance to a better position while you are being suppressed or attempting to avoid observation, use the high or low crawl depending on the available cover and concealment. The Marine must maintain communication by any means possible to allow his buddy to move. This can be done yelling, "SET."

f. **Kill**. Your decision-making process must continue cycling during the conduct of fire and movement. While providing suppression, he must continue to observe the direct front for enemy, terrain, orders or leader's intent. His assessment will lead to him to be orient and decide on his next movement and opportunity to kill the enemy. Any disruption of the OODA process leads to loss of momentum, resulting in friction during the attack.

5. **PHASES OF OFFENSIVE COMBAT**. (MCT-PAT-1001a)

a. There are three phases to offensive combat they are preparation, conduct, and exploitation phase.

b. **Preparation**. The preparation phase begins with the receipt of the warning order. It ends when the lead element crosses the line of departure or when contact is made with the enemy-whichever comes first. It is usually accomplished in three steps: movement to the assembly area, final preparations

and rehearsals in the assembly area, and movement to the line of departure.

c. **Conduct**. The conduct phase of offensive combat begins when the squad is forced to fire on the enemy in order to advance or the leading troops cross the line of departure. The conduct phase includes:

(1) Movement forward of the line of departure to the assault position. When the squad leader believes he has reached a point where his squad can no longer advance without sustaining casualties, he orders one or two fire teams to fire on the enemy positions while the remainder of the squad moves forward under the protection of this covering fire. When the enemy position is isolated and has exposed flanks, the squad leader attempts to maneuver over a covered and concealed route so as to strike the enemy position in the flank or rear. When this is not possible, a frontal attack requiring fire and maneuver is executed.

d. **Advance By Fire And Maneuver**. Once fire superiority has been gained, the squad continues its advance. Two forms of maneuver for the rifle squad are the single envelopment and the frontal attack using rushes.

(1) Single Envelopment. A squad maneuvering against the enemy's flank is normally covered by a supporting attack conducted by another squad acting as the base of fire. The maneuvering squad moves toward the flank of the enemy so as to place itself in a position to make an assault.

(2) Frontal Attack. When there is no opportunity for maneuver to either flank of the enemy, the maneuvering squad moves directly to the front. The squad leader orders one fire team to advance under cover of fire of the remainder of the squad. Fire teams advance as rapidly as possible to new firing positions, using the cover and concealment available. The frontal attack is the most frequently used form of maneuver by the rifle squad. The frontal attack requires less time and coordination and is easier than the single envelopment. However, the attack moves against the enemy's strength and prepared fires and there is little chance he will be surprised.

e. **Arrival At The Assault Position**. The primary object in advancing the attack by fire and maneuver and/or fire and movement is to get part or all of the attacking unit in position to assault the enemy. The position from which the final assault is launched is called the assault position. As the attacking

squad closes with the enemy, covering fires delivered by both direct and indirect fire weapons on the enemy position increase in intensity. In order to avoid casualties by friendly fire these supporting fires are ceased or shifted just prior to reaching the objective. The control measure where this happens is the final coordination line (final CL). Both the assault position and final CL are crucial to the assault.

(1) Assault Position. The assault position is tentatively established during the squad leader's planning and reconnaissance. It is the position between the line of departure and the objective, from which the assault on the enemy position is launched. The assault position is located as close as the assaulting element can move by fire and maneuver without sustaining casualties from or masking covering direct (base of fire) or indirect fires (artillery and mortar). The assault position should be easily recognizable on the ground and ideally should offer concealment and cover to the attacking force. Here, the final steps are taken to ensure a coordinated assault, and only a minimum amount of time should be spent in this position to preclude the enemy from fixing the assault element in place.

(2) Final Coordination Line. The final coordination line is used as the control feature to coordinate the ceasing or shifting of the direct and indirect fire which is supporting the assault.

f. Assault And Advance Through The Assigned Objective. The assault must be launched close under the covering fires and begin when the leading assault elements have advanced as close to the enemy as possible without moving into friendly covering fires. The assault is started on order or signal of the platoon commander or on the initiative of the squad or fire team leader. The squad advances rapidly and aggressively from the assault position, using assault fire techniques.

(1) Consolidation And Reorganization. The major concern of the assaulting unit leader once the enemy has been driven from the objective is to retain control of the objective. If the enemy allocated troops to defend the objective in the first place, it is reasonable to assume that he will allocate troops to try to take it back.

g. Exploitation. Exploitation normally occurs after a successful assault and seizure of the objective. It begins immediately after or in conjunction with the consolidation and reorganization phase. It is a continuation of the attack aimed

at destroying the enemy's ability to conduct an orderly withdrawal or organize a defense. Pursuit by fire and/or continuation of the attack are methods used to exploit success.

(1) Pursuit By Fire. When the assault through the assigned objective is completed, the squad fires upon the withdrawing enemy forces until they are no longer visible or are beyond effective range.

(2) Continuation Of The Attack. The purpose of continuing the attack is to maintain pressure on the retreating enemy and destroy his combat power. When ordered, the rifle squad continues the attack. The squad leader repeats all the steps performed for previous attacks. Frequently, the urgent need of a higher command to maintain momentum requires that these steps be done rapidly so that the attack can be continued with minimum delay.

PERFORMANCE EXAMINATION CHECKLIST

0300-PAT-1005

Given an individual weapon, while wearing a fighting load, perform individual movement techniques to arrive at the objective.

Student Instructions:

1. You are a Marine and must perform individual movement techniques.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and perform individual movement techniques to arrive at the objective.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Negotiate obstacles.			
2. Perform high crawl.			
3. Perform low crawl.			
4. Perform individual actions during fire and movement (fight from cover to cover).			
5. Perform individual actions in combat formations.			

6. Perform the walking technique for night movement.			
7. Perform individual actions in response to ground/aerial illumination.			
8. Perform the creeping technique for night movement.			

0300-PAT-1008

Given a patrol order, assigned weapon, and an assignment in a patrol, while wearing a fighting load, perform individual actions in a patrol without compromising the integrity of the patrol.

Student Instructions:

1. You are a Marine and must perform individual actions in a patrol.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and patrol without compromising the integrity of the patrol.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Prepare for combat.			
2. Perform individual actions in exiting friendly lines.			
a. Perform action as the pointman.			
b. Perform action as the radioman.			
c. Perform action as the navigator.			
d. Follow the commands of the guide/patrol leader, as required.			
e. Pass on communication to other patrol members.			
3. Perform individual actions at halts.			
a. Maintain security without compromising the integrity of the patrol.			
b. Identify cover and concealment.			
c. Execute individual action during short/long halt, as required.			
d. Remain quiet, observe, and listen during halt.			
e. Pass on communication to other patrol members.			

4. Perform individual movement techniques.			
5. Perform actions at established control measures (Check Points).			
a. Rally points.			
b. Initial rally points.			
c. Enroute rally points.			
d. Objective rally points.			
6. Perform immediate action drills, as necessary.			
7. Perform individual actions in re-entry of friendly lines.			
8. Participate in the patrol debriefs.			

0300-PAT-1009

Given a patrol order, assigned weapon, and an assignment in a patrol, while wearing a fighting load, perform immediate actions to negate the threat.

Student Instructions:

1. You are a Marine and must perform immediate actions.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and perform immediate actions to negate the threat.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Perform individual actions during an immediate halt.			
a. Give the hand and arm signal for "freeze."			
b. Remain motionless/quiet.			
2. Perform individual actions during air observation.			
a. Give the hand and arm signal for "freeze."			
b. Remain motionless/quiet.			
3. Perform individual actions during air attack.			
a. Shout "aircraft and direction."			
b. Move into a line formation at a right angle to aircraft direction.			
c. Seek cover.			
d. Fire on the aircraft only at the direction of the patrol leader.			

4. Perform individual actions during a hasty ambush.			
a. Give the "hasty ambush" hand and arm signal.			
b. Move into the direction of the ambush.			
c. Take up best available concealed firing position.			
d. Respond to commands, as required.			
5. Perform individual actions during an immediate assault.			
a. Open fire on enemy.			
b. Seek cover.			
c. Shout direction of contact.			
d. Move swiftly into line formation.			
6. Perform individual actions during a near-counter-ambush.			
a. Determine enemy is within 50 meters.			
b. Assault without command.			
c. Occupy ambush position.			
d. Continue assault, as directed.			
e. Break contact, as directed.			
f. Respond to commands, as required.			
7. Perform individual actions during a far-counter-ambush.			
a. Determine enemy is beyond 50 meters.			
b. Return fire if in the kill zone.			
c. Take cover.			
d. Continue to fire.			
e. Maneuver against the ambush force if not in kill zone.			
g. Respond to commands, as required.			
8. Perform individual actions upon contact with a booby trap/Improvised Explosive.			
9. Perform individual actions while crossing a danger area.			
a. Identify type of danger areas.			
b. Reconnoiter near/far side.			
c. Provide security.			
d. Maintain unit integrity.			
10. Perform individual actions while breaking contact.			
a. Move to designated direction and distance, as ordered.			

b. Keep relative position while moving so original formation is disrupted as little as possible.			
11. Perform individual actions during an indirect fire attack.			
a. Announce, "INCOMING!"			
b. Immediately assume the prone position or move to immediately available cover during initial impacts.			
c. Move rapidly in the direction and distance to the designated rally point, when ordered.			
12. Perform individual actions upon contact with a sniper.			
a. Take Cover.			
b. Attempt to identify the enemy firing position.			
c. Respond to commands, as required.			

REFERENCES :

NUMBER	TITLE	PAGE
MCRP 3-10A.3	Marine Rifle Squad	Entire Manual; Chapter 8
MCTP 3-01A	Scouting and Patrolling	Entire Manual

NOTES :

STUDENT OUTLINE

DEFENSIVE FUNDAMENTALS

MCT0404

10/08/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given an individual weapon, entrenching tool, and sector of fire, while wearing a fighting load, construct a hasty fighting position to provide cover and concealment. (0300-DEF-1002)

(2) Given a fighting position, assigned weapon, while wearing a fighting load, defend a position to repel the enemy. (0300-DEF-1003)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify the priorities of work in the defense in accordance with MCRP 3-10A.3. (0300-DEF-1002a)

(2) Given a list of choices, identify consideration for a hasty fighting position in accordance with TC 3-21.75. (0300-DEF-1002b)

(3) Given a list of choices, identify characteristics of a sector of fire in accordance with MCRP 3-10A.3. (0300-DEF-1002c)

(4) Given a list of choices, identify the characteristics of the defense in accordance with MCRP 3-10A.3. (0300-DEF-1003a)

(5) Given a list of choice, identify the types of fighting positions within a defense in accordance with MCRP 3-10A.3. (0300-DEF-1003b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to introduce you to the fundamentals of the defense so that you may effectively support your higher unit's mission to destroy or repel the enemy. I will do that by covering the following: characteristics of the defense, sector of fire, cover and concealment, priorities of work, hasty fighting position and fire Commands. This lesson relates to the Combat Hunter and Military Operations on Urban Terrain training that you have/will receive here at Marine Combat Training Battalion.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

OUTLINE.

1. **CHARACTERISTICS OF THE DEFENSE.** (0300-DEF-1003a)

a. **Purpose Of Defensive Action.** To retain or control terrain, gain time, develop more favorable conditions for offensive action, or to economize forces to allow the concentration of forces elsewhere. Although offensive action is generally the decisive form of combat, it may be necessary to conduct defensive operations when there is a need to buy time, hold a key piece of terrain, facilitate other operations, preoccupy the enemy in one area so friendly forces can attack them in another, or erode enemy resources at a rapid rate while reinforcing friendly operations. The objective to the defense is to force the enemy to reach their culminating point without achieving their objective.

b. **Forward Edge Of The Battle Area (FEBA).** The FEBA is the foremost limits of a series of areas in which ground combat units are deployed. The FEBA is a control measure that divides the security area from the main battle area. The FEBA need not be physically occupied, but it should be controlled by friendly fire.

c. **The Battle Position.** The Battle Position is defined as position on which the main effort of defense is concentrated. A battle position is assigned to battalions, companies, and platoons. A battle position is made up of a series of sectors of fire that support one another. Platoon battle positions are assigned a right and a left limit of fire. A limit of fire is a boundary marking the area in which gunfire can be delivered.

The limits of fire should be indicated by readily identifiable terrain features located at or beyond the limit of effective small arms fire.

d. **Fighting Position.** A location on the ground from which fire is delivered by an individual, a fire unit (squad or fire team), or a crew served weapon.

e. **Fire Plan Sketch.** Squad leaders prepare the squad fire plan sketch in duplicate; giving one sketch to the platoon commander for approval and keeping a copy for themselves which they maintain at their fighting positions. The sketch should include the fire team fighting positions and sectors of fire, the fighting positions and principal directions of fire of the automatic rifles, and the squad leader's fighting position. If the rifle squad is providing protection for a crew-served weapon, its position, primary fire mission (i.e., final protective line for machine guns and principal direction of fire for other crew-served weapons), and range card should be included as part of the sketch.

f. **Primary Fighting Position.** The best position from which to accomplish the mission and cover the assigned sector of fire. Assigned to individuals, fire teams, squads, and crew served weapons.

g. **Principal Direction Of Fire.** A principal direction of fire (PDF) is a direction of fire assigned priority to cover an area that has good fields of fire or has a likely dismounted avenue of approach. The gun is positioned to fire directly down this approach rather than across the platoon's front. It also provides mutual support to an adjacent unit. Machine guns are sighted using the PDF if an FPL has not been assigned. If a PDF is assigned and other targets are not being engaged, machine guns remain on the PDF.

2. **SECTOR OF FIRE.** (0300-DEF-1002c)

a. **Sector Of Fire.** The area which is required to be covered by fire by an individual, a fire unit (squad or fire team), or a crew served weapon.

b. **The Forward Limit.** The Forward Limit is established at the range at which the weapon will open fire. For rifles and automatic rifles, this may extend up to their maximum effective

ranges. As the attacker passes this limit, the attacker is brought under fire.

c. **Fields Of Fire.** Fields of fire are the areas that a weapon or group of weapons can cover and are essential to the effective employment of direct fire weapons. Observation and fields of fire should be considered both from friendly and enemy points of view. Fields of Fire need to be cleared in order to be able to observe and engage targets that are approaching your defensive position. When clearing, ensure that excessive clearing of the natural landscape is avoided, as this can disclose the unit's fighting position.

3. **COVER AND CONCEALMENT.** (0300-DEF-1002b)

a. **Cover.** Cover is made of natural or man-made materials, gives protection from bullets, fragments of exploding rounds, flame, nuclear effects, biological and chemical agents, and enemy observation.

b. **Concealment.** Anything that hides you from enemy observation is considered concealment. Concealment does not protect you from enemy fire. Natural concealment includes bushes, grass, and shadows. If possible, natural concealment should not be disturbed because they are already prepared, seldom attract enemy attention, and need no replacement.

c. **Considerations.** While digging your position, try not to disturb the natural concealment around it. Put the unused dirt from the hole behind the position and camouflage it.

(1) Camouflage material that does not have to be replaced (rocks, logs, live bushes, and grass) is best. Avoid using so much camouflage that your position looks different from its surroundings.

(2) Light, noise, and movement discipline, and the use of camouflage, contributes to concealment. Light discipline is controlling the use of lights at night by such things as not smoking in the open, not walking around with a flashlight on, and not using vehicle headlights.

(3) Noise discipline is taking action to deflect sounds generated by your unit (such as operating equipment) away from

the enemy and, when possible, using methods to communicate that do not generate sounds (arm-and-hand signals).

(4) Movement discipline includes not moving about fighting positions unless necessary and not moving on routes that lack cover and concealment. In the defense, build a well camouflaged fighting position and avoid moving about.

4. **PRIORITIES OF WORK IN THE DEFENSE.** (0300-DEF-1002a)

a. The organization of the ground, or the construction of the defense, begins as soon as individual members have been assigned sectors of fire. It contains seven tasks. They can be remembered using the acronym **SAFE SOC**, **S**-security, **A**-automatic weapons emplacement, **F**-fields of fire, **E**-entrenchment, **S**-supplementary and alternate positions, **O**-obstacles, **C**-camouflage/continuing actions. These are the actions that we take in order to properly conduct the defense.

(1) Security. Security in the defense includes all active and passive measures taken to avoid detection by the enemy, deceive the enemy, and deny enemy reconnaissance elements accurate information on friendly positions. The squad may be tasked with establishing OPs and LPs, conducting security patrols, or a combination of both.

(a) There are times when you may be posted in an observation post (OP) or in a listening post (LP) to watch and/or listen for enemy activity. An LP/OP is a position from which you observe an assigned sector of observation and report all activity seen or heard in your sector.

(b) Local security patrols may be sent out to prevent enemy observation or attack. You will be told if there is one out so you don't mistakenly engage them.

(2) Automatic Weapons Emplacement. To position weapons effectively, squad leaders must know the characteristics, capabilities, and limitations of all company weapons; the effects of terrain; and the tactics used by the enemy. Additionally, the squad leader should consider whether the primary threat will be mounted or dismounted; the plan should address both. Also, the squad leader may have a combination of direct and indirect fire assets from the company attached.

(3) Clearing Fields Of Fire. In clearing fields of fire forward of the squad's positions, the following guidelines should be considered:

(a) The squad's position should not be disclosed by excessive or careless clearing; always leave a thin natural screen of foliage to conceal fighting positions.

(b) Clearing should start just forward of the fighting positions and work forward to the limit of effective small arms fire range.

(c) In sparsely wooded areas, the lower branches of large trees should be removed. In some situations, it may be desirable to remove whole trees which might be utilized as aiming/reference points for enemy indirect fires.

(d) In heavy woods, work should be restricted to thinning undergrowth and removing lower branches of large trees. In addition, narrow lanes of fire should be cleared for automatic weapons.

(e) If practical, buildings and walls forward of the fighting position which may obstruct fields of fire or provide cover and concealment to the enemy should be demolished.

(f) Care must be taken to ensure that fields of fire are cleared of obstructions which might cause premature detonation of grenadiers' projectiles.

(4) Entrenchment. The defensive plan will normally require the construction of fighting positions. Fighting positions protect Marines by providing cover from direct and indirect fires and by providing concealment from ground and aerial observation through positioning, proper camouflage, and employing deception measures. Because battlefield conditions are never standard, there is no single standard fighting position design that fits every tactical situation.

(5) Supplementary And Alternate Fighting Positions. The squad prepares supplementary fighting positions that are organized in the same manner as the primary fighting positions but oriented in a different direction. If crew-served weapons are attached or employed in the squad's sector, alternate fighting positions should also be prepared for them.

(a) Supplementary Positions. Secondary positions that do not cover the same sector of fire as the primary positions. Prepared to guard against attacks from directions other than where the main attack is expected. Designed to provide security.

(b) Alternate Positions. Not normally assigned to individuals within the squad. Utilized primarily by crew-served weapons. Positioned so that the squad or crew-served weapons may accomplish their original mission if the primary position becomes unsuitable or untenable.

(6) Constructing Obstacles. Obstacles are designed to break up the enemy's attack, canalize him into heavy weapons fire, and disorganize his assault.

(a) You may be ordered to construct obstacles such as barbed wire, log, and brush barriers, ditches, and hasty protective minefields.

(b) Obstacles are located beyond hand grenade range and are covered by fire.

(7) Camouflage. Camouflage is the use of concealment and disguise to minimize the possibility of detection and/or identification of troops, material, equipment, and installations. The purpose of camouflage is to conceal military objects from enemy observation. Camouflage is also used to conceal an object by making it look like something else. A rifle squad's mission often requires individual and equipment camouflage. Camouflage makes use of both natural and man-made material. Foliage used as camouflage must blend with that of the surrounding area. Individuals, gear, and exposed positions can be concealed from enemy observation by using the right materials and procedures.

5. HASTY FIGHTING POSITION. (0300-DEF-1002b)

a. Hasty fighting positions, used when there is little time for preparation, should be behind whatever cover is available. However, the term hasty does not mean that there is no digging. The best possible position should be chosen, one that supports interlocking sectors of fire, with considerations for possible avenues of approach and utilizes clear fields of fire.

b. If a natural hole or ditch is available, use it. A shell crater, which is 2 to 3 feet wide, offers immediate cover (except for overhead) and concealment. Digging a steep face on the side toward the enemy creates a hasty fighting position. This position should give frontal cover from enemy direct fire but allow firing to the front and the oblique. When there is little or no natural cover, hasty positions provide as much protection as possible.

c. A skirmisher's trench is a shallow position that provides a hasty prone fighting position. When you need immediate shelter from enemy fire, and there are no defilade firing positions available, lie prone or on your side, scrape the soil with an entrenching tool, and pile the soil in a low parapet between yourself and the enemy. Open entrenching tool so that it forms an "L" shape, making scraping easier. In all but the hardest ground, you can use this technique to quickly form a shallow, body-length pit. Orient the trench so it is oblique to enemy fire. This keeps your silhouette low, and offers some protection from small-caliber fire. The prone position is a further refinement of the skirmisher's trench. It serves as a good firing position and provides you with better protection against the direct fire weapons than the crater position or the skirmisher's trench. Hasty positions are further developed into deliberate positions that provide as much protection as possible. The hole should be about 18 inches deep and use the dirt from the hole to build cover around the edge of the position, this is called a parapet. The parapet is 6 inches high by 36 inches long. Once the position is built, improvements should be made continuously to your position and the camouflage around it.

d. In clearing fields of fire forward of each fighting position, the following guidelines should be observed:

(1) Do not disclose the squad's fighting position by excessive or careless clearing.

(2) Start clearing near the fighting position and work forward to the limits of effective small arms fire.

(3) In all cases, leave a thin natural screen of foliage to hide fighting positions.

(4) In sparsely wooded areas, remove the lower branches of scattered large trees. It may be desirable to remove entire trees which might be used as reference points for enemy fire.

(5) Move cut brush to locations where it will not furnish concealment to the enemy or disclose the squad's fighting position.

6. **FIRE COMMANDS.** (0300-DEF-1002c)

a. **Commence And Cease Fires.** This signal is a prearranged pyrotechnic or audible signal and is normally passed to the squad from the platoon commander. This signal also could be passed utilizing the hand and arm signal. The exact method of which signal will be given will be supplied in the order you receive. The squad leader may desire the fire teams to hold their fire until the enemy gets closer than maximum effective small arms range, and then deliver a heavy volume of surprise fire. In this case, he will establish a signal for commencing fire. In some cases, the signal for commence fire may also be once the enemy crosses an easily identifiable terrain feature, that again, will be in the order you receive.

b. **ADDRAC.** Since enemy troops are trained in the use of cover and concealment, targets are often indistinct or invisible, seen only for a short time, and rarely remain uncovered for long. When a target is discovered, leaders and squad members must define its location rapidly and clearly. Precedence of targets will be determined by threat, size, and disposition. There are six elements to the ADDRAC, they are as follows:

Alert.
Direction.
Target **D**escription.
Range.
Target **A**ssignment.
Fire **C**ontrol.

PERFORMANCE EXAMINATION CHECKLIST

0300-DEF-1002

Given an individual weapon, entrenching tool, and sector of fire, while wearing a fighting load, construct a hasty fighting position to provide cover and concealment.

Evaluator Instructions:

1. Each Marine is assessed individually on this task.
2. The requirements and procedures outlined in the Instructor Preparation Guide are utilized to conduct this performance examination.
3. There is no time limit associated with this task.
4. To achieve mastery, the student must complete the performance checklist and construct a hasty fighting position to provide cover and concealment.

Student Instructions:

1. You are a Marine and must construct a hasty fighting position.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and provide cover and concealment.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Trace outline.			
2. Dig a position.			
a. Scrape a trench with the entrenching tool.			
b. Dig while maintaining a low silhouette.			
c. Expand the trench to a shallow body length pit.			
(1) Approximately 18 inches deep.			
(2) Ensure cover around the edges.			
3. Construct a parapet in front of trench.			

a. Approximately 3 feet thick and 6 inches high.			
4. Camouflage the position.			
a. Ensure camouflage fits the environment.			
b. Use available materials for concealment.			
c. Continuously improve position.			
(1) Verbally state improvement plan, as directed.			

0300-DEF-1003

Given a fighting position, assigned weapon, while wearing a fighting load, defend a position to repel the enemy.

Evaluator Instructions:

1. Each Marine is assessed individually on this task.
2. The requirements and procedures outlined in the Instructor Preparation Guide are utilized to conduct this performance examination.
3. There is no time limit associated with this task.
4. To achieve mastery, the student must complete the performance checklist and defend a position to repel the enemy.

Student Instructions:

1. You are a Marine and must defend a position.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and repel the enemy.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Maintain observation to the front, flank, and rear.			
a. Receive a defensive order.			

2. Report information within the sector of fire, as necessary.			
a. Identify assigned sector.			
3. Respond to fire commands.			
a. React to signal for commence firing, as required.			
b. React to signal for cease fire as required.			
4. Displace to alternate or supplementary position, as ordered.			
a. Verbalize actions to move to the alternate or supplementary position, as directed.			
5. Perform continuing actions throughout the duration of the defense.			
a. Build a sector sketch.			
b. Maintain light discipline.			
c. Maintain noise discipline.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>PAGE</u>
MCRP 3-10A.3	Marine Rifle Squad	Chapter 2, Chapter 5, and Appendix D
TC 3-21.75	The Warrior Ethos and Soldier Combat Skills	Chapter 5 and Chapter 6

NOTES :

STUDENT OUTLINE

MILITARY OPERATIONS ON URBAN TERRAIN (MOUT)

MCT0405

6/27/2019

LEARNING OBJECTIVES FOR THIS LESSON

a. TERMINAL LEARNING OBJECTIVES.

(1) Given an assigned weapon and a mission, while wearing a fighting load, perform individual movement in an urban environment in accordance with MCRP 12-10B.1. (0300-MOUT-1001)

(2) Given a weapon and functioning as a member of a team, while wearing a fighting load, perform individual actions while clearing a room to clear the room of threats. (0300-MOUT-1002)

b. ENABLING LEARNING OBJECTIVES.

(1) Given a list of choices, identify the characteristics of an urban environment in accordance with MCRP 12-10B.1. (0300-MOUT-1001a)

(2) Given a list of choices, identify the considerations for operating in an urban environment in accordance with MCRP 12-10B.1. (0300-MOUT-1001b)

(3) Given a weapon and functioning as a member of a clearing team, while wearing a fighting load, demonstrate clearing techniques in accordance with MCRP 12-10B.1. (0300-MOUT-1002a)

(4) Given a list of choices, identify techniques for defending a room/building in accordance with MCRP 12-10B.1. (0300-MOUT-1002b)

STUDENT INFORMATION

OVERVIEW: The purpose of this lesson is to introduce you to Military Operations on Urban Terrain (MOUT) and how to safely perform individual movement in an urban environment. I will do this by covering the characteristics of an urban environment,

consideration of urban environment, individual movement, clearing techniques and defensive techniques.

CLASS PREPARATION: Read this outline prior to class and be prepared to actively participate.

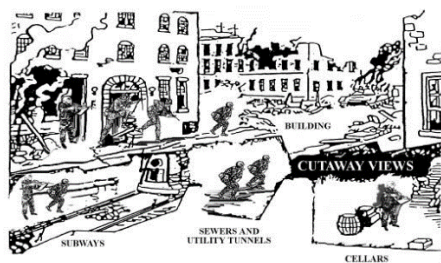
OUTLINE.

1. CHARACTERISTICS OF AN URBAN ENVIRONMENT. (0300-MOUT-1001a)

MOUT is defined as all military actions that are planned and conducted on a topographical complex and its adjacent natural terrain where man-made construction is the dominant feature. It includes combat in cities, which is that portion of MOUT involving house-to-house and street-by-street fighting in towns and cities. A built-up area is a concentration of structures, facilities, and populations, such as villages, cities, and towns that form the economic and cultural focus for the surrounding area. In order to be successful you must keep a constant vigilant 360 degree security posture.

a. Multiple Avenues Of Approach.

(1) Urbanized terrain is a unique battle space that provides both attacker and defender with numerous and varied avenues of approach and fields of fire.



(2) The urban battle space is divided into four basic levels: *building*, *street*, *subterranean*, and *air*. Operations can be conducted from above ground, on ground level, inside buildings, or below the ground.

(a) Building Level. Buildings provide cover and concealment; limit or increase fields of observation and fire; and canalize, restrict, or block movement of forces, especially mechanized forces. They provide optimum perches for snipers and anti-air weapons. Buildings also provide antitank weapons

optimum positioning to allow engagement from above, exploiting an inherent weakness found in most armored vehicles.

(b) Street Level. While streets provide the means for rapid advance or withdrawal, forces moving along streets are often canalized by buildings and have little space for off-road maneuver. Because they are more difficult to bypass, obstacles on streets in urbanized areas are usually more effective than those on roads in open terrain.

(c) Subterranean Level. Subterranean systems are easily overlooked but can be important to the outcome of operations. These areas may be substantial and include subways, sewers, cellars, and utility systems (Figure 1-1 on page 1-4). The city of Los Angeles alone has more than 200 miles of storm sewers located under the city streets. Both attacker and defender can use subterranean avenues to maneuver to the rear or the flanks of an enemy. These avenues also facilitate the conduct of ambushes, counterattacks, and infiltrations.

(d) Air Level. The air provides another avenue of approach in urbanized areas. Aviation assets can be used for high speed insertion or extraction of troops, supplies, and equipment. While aviation assets are not affected by obstacles on the streets, they are affected by light towers, signs, power lines, and other aerial obstructions. They are also vulnerable to the man-portable surface-to-air missile threat, crew served weapons, and small arms fire.

(3) Most operations will include fighting on all levels simultaneously. In order to be successful you must keep a constant vigilant 360 degree security posture.

2. CONSIDERATIONS OF URBAN ENVIRONMENT. (0300-MOUT-1001b)

a. Reasons For Attacking A Built-Up Area. A commander considers the following before deciding to attack a built-up area:

(1) Tactical Advantage. Cities control key routes of commerce and provide a tactical advantage to the commander who controls them. Control of features such as bridges, railways, and road networks can have a significant impact on future operations. Urbanized areas may be used by the enemy as a base of operations from which they launch their own offensive operations. It may be advantageous to attack those bases and separate the enemy from their support infrastructure.

(2) Political Advantage. The political importance of a built-up area may justify the use of time and resources to liberate it. Capturing a city could destroy the seat of local and national government. At the very least, it could deal the enemy a decisive psychological blow.

(3) Economical Advantage. The destruction or capture of key industrial and commercial cities with the resulting denial of production and distribution of equipment and supplies strikes at the enemy's future ability to wage war. The requirement for a logistics base, especially a port or airfield, may play a pivotal role in the enemy's ability to continue the conflict. Capture of such cities may prove extremely beneficial to the attackers, who can use these resources to their advantage.

(4) Potential Threats To Operations.

(a) Enemy Threat Too Great To Bypass. Though the terrain around a built-up area may facilitate its bypass, the enemy within that urbanized area may remain a threat capable of interdicting lines of communications. This may require the enemy force to be contained or destroyed.

(b) Terrain Does Not Allow Bypass. The urbanized area may sit between two natural slopes on the avenue of approach and thus require capture in order to secure the main supply route. Additionally, the urbanized area, itself, may sit on dominating terrain that threatens combat support and CSS elements.

b. Types Of Buildings.

(1) Mass-Construction Buildings. Mass-construction buildings are those in which the outside walls support the weight of the building and its contents. Additional support, especially in wide buildings, comes from using load-bearing interior walls, strongpoints (called pilasters) on the exterior walls, cast-iron interior columns, and arches or braces over the windows and doors. Modern types of mass-construction buildings are wall and slab structures, such as many modern apartments and hotels, and "tilt-up" structures commonly used for industry or storage. Mass-construction buildings are built in many ways: The walls can be built in place by using brick, block, or poured-in-place concrete. The walls can be prefabricated and then tilted up, or they can be reinforced-concrete panels. The walls can be prefabricated and assembled like boxes.

(2) Framed Buildings. Framed buildings are supported by a skeleton of columns and beams and are usually taller than frameless buildings. The exterior walls are not load-bearing and are referred to as either heavy clad or light clad. Another type of framed building often found in cities is the garage, which generally has no cladding.

(a) Heavy-clad buildings were common when framed buildings were first introduced. Their walls are made of brick and block that are sometimes almost as thick as frameless brick walls, although not as protective. The frame members (the columns) can be seen, especially at the ground floor. The cladding, consisting of layers of terra cotta blocks, brick, and stone veneer, does not provide as good a cover as the walls of brick buildings. It protects against small-arms fire and light shrapnel but does not provide much cover against heavy weapons.

(b) Light-clad buildings are more modern and may be constructed mostly of glass. Their walls consist of a thin layer of brick, lightweight concrete, or glass. Such materials provide minimal protection against any weapon. However, the floors of the buildings are much heavier and provide moderate overhead cover. The rooms in light-clad framed buildings are much bigger than those in heavy-clad buildings.

c. Limited Visibility.

(1) Operational Considerations. Marine units conduct attacks during periods of limited visibility to gain or sustain the momentum of the attack. Before conducting a limited-visibility attack, marines must balance the risks in order to enhance the chances for mission accomplishment.

(a) To reduce confusion, Marines should clear buildings and rooms using the same techniques they use during the day.

(b) Movement rates are slower in the dark. Each Marine must remain alert for mines, boobytraps, and enemy positions.

(c) Rifle squads and fire teams should be equipped with a mixture of both thermal imaging and light intensification devices whenever possible. This enables the squads and fire teams to obtain a better picture of the night environment and enables Marines to balance the strengths and weaknesses of each type of night vision device for maximum results.

(d) If flashlights or chemiluminescent lights are used, they should be held away from the head or chest area. This will make it harder for enemy soldiers firing at the light to kill the Marine holding the flashlight or chemiluminescent light.

(e) Units must know where everyone is during offensive operations. This not only reduces the risk of fratricide, but also decreases the time spent identifying, locating, and treating casualties. Also, it greatly reduces the chance of Marines becoming disoriented and separated from the unit.

3. **INDIVIDUAL MOVEMENT.** (0300-MOUT-1001)

a. **Movement Parallel To Buildings.**

(1) Marines and small units may not always be able to use the inside of buildings as a route of advance. In such cases, they should move on the outside of the buildings.

(2) Smoke, covering fires, and cover and concealment should be used to hide movement.

(3) When correctly moving along the outside of a building, the Marine hugs the outside walls of the building, maintains close proximity to the wall without touching it, stays in the shadow, presents a low silhouette, selects the next position before moving, and moves rapidly to his next position.

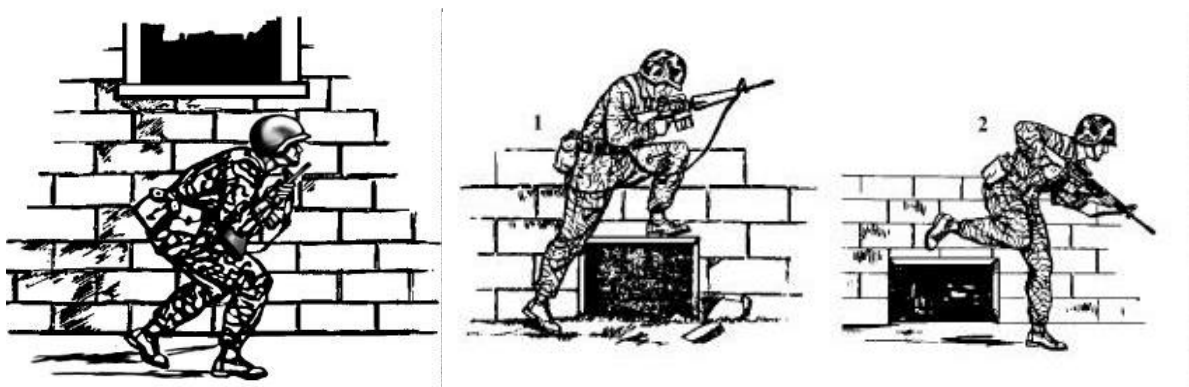
b. **Pieing.** Pieing is an effective technique for clearing dead space inside rooms and buildings to gain security of hallways, and stairwells. It is conducted by using the ready carry position or short stocking technique. The weapon is aimed at a sector of a window, doorway, corner, or hallway and slowly moved at different angles, sectoring off the window, doorway, corner, or hallway until each sector is cleared of any threat. As soon as a hostile threat is seen, immediate, accurate fire can be placed on the threat.

c. **Movement Past Entryways.**

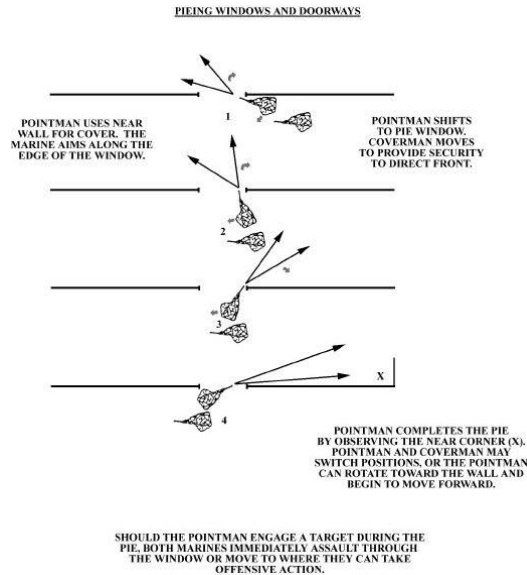
(1) **Windows.** Windows present another hazard to Marines. The most common mistake made when passing a window is exposing the head to enemy observation from inside the room. If a Marine shows his head, an enemy gunner inside the building could engage him through the window without exposing himself to return fires.

(a) The correct technique for passing a window is for the Marine to stay below the window level. He makes sure he does not silhouette himself in the window; he "hugs" the side of the building. An enemy gunner inside the building would have to expose himself to covering fires to engage the Marine.

(b) The most common mistake Marines make when passing a basement window is not being aware of it. A Marine should not walk or run past a basement window because he presents a good target to an enemy gunner inside the building. The correct procedure for negotiating a basement window, is the Marine staying close to the wall of the building and steps or jumps past the window without exposing his legs.



(c) An alternate method is for the pointman to pie off the window (or other opening) as he approaches it. As the pointman moves toward the window, the second Marine (behind the pointman) steps out to provide security to the direct front. The pointman continues to cover the opening by pieing, all the while using the near edge for cover. The pointman covers and sectors off that part of the interior that can be viewed from the outside. The second Marine moves with the pointman and maintains security to the front, eventually moving past the pointman as the pointman clears the inside corners of the opening. Once the opening is cleared, the second man may assume the duties of point, or when subsequent Marines move up to secure the opening, the original pointman may reassume those duties.



(2) Use Of Doorways. Doorways should not be used as entrances or exits because they are normally covered by enemy fire. If a Marine must use a doorway as an exit, he should move quickly through it to his next position, staying as low as possible to avoid silhouetting himself. Preselection of positions, speed, a low silhouette, and the use of covering fires should be emphasized when exiting doorways.

d. Observe Around A Corner. The area around a corner should be observed before the Marine moves beyond it. The most common mistake the Marine makes at a corner is allowing his weapon to extend beyond the corner before observing, thereby exposing his position. Using the short stocking technique reduces exposure.

(1) Short Stocking. How the weapon is held to reduce the length of the weapon. Used to increase maneuverability in enclosed areas and reduce possible "target indicators" such as muzzle sticking around a corner.

(2) Keep A Low Silhouette. Marines use a technique called "popping the corner" to reduce exposure time. The Marine will get into a prone position near the corner of a building or obstacle around which he needs to observe. The weapon is short stocked, and the muzzle is pointed in the direction the Marine is looking. This allows the Marine to engage a target, if necessary, when he observes around a corner. The Marine will crawl to the corner but not expose himself. He will raise his upper body onto his elbows. The Marine will then push his body forward with his feet and legs without moving his elbows. His

upper body, with the weapon ready, will move forward. The final position will expose the weapon, the Marine's helmet, and a minimal amount of the Marine's face. The Marine's forearms will come to rest on the deck giving him a low profile, the ability to observe around the corner, and the immediate capability to engage targets with his weapon.



e. **Crossing A Danger Area.** Open areas such as streets, alleys, and parks should be avoided. They are natural kill zones for enemy crew-served weapons. They can be crossed safely if certain fundamentals are applied by Marines and small-unit leaders.

(1) When using the correct procedure for crossing an open area, the Marine develops a plan for his own movement. (Smoke from hand grenades or smoke pots should be used to conceal the movement of all Marines). The Marine runs the shortest distance between buildings and moves along the far building to the next position. By doing so, he reduces the amount of time during which he is exposed to enemy fire.

(2) Before moving to another position, the Marine should make a visual reconnaissance and select the position that offers the best cover and concealment. At the same time, he should select the route that he will take to get to that position.

(3) When moving from position to position, each Marine should be careful **not to mask his supporting fires**. When he reaches his next position, he should be prepared to cover the movement of other members of his assault force or element.



f. **Crossing A Wall.** After reconnoitering (check out) the other side, the Marine quickly rolls over the wall, keeping a low silhouette. The speed of this movement and a low silhouette deny the enemy a good target.

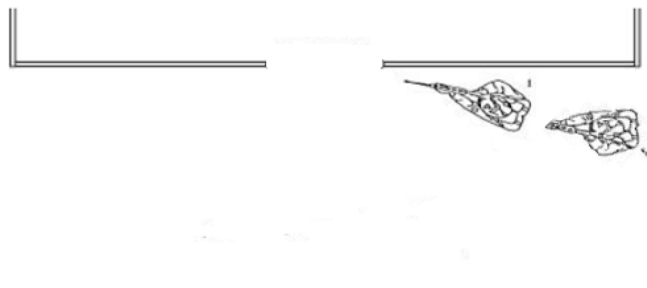
4. **CLEARING TECHNIQUES.** (MCT-MOUT-1002a)

a. **Actions Outside The Entryway.**

(1) Caution should be taken when using stacked type position as personnel may be concentrating in a danger area where they could be exposed to fires.

(2) The covering team is positioned by the assault element leader to provide security as the clearing team begins its procedures to enter and clear a room.

(3) The two-man is behind the one-man (stacked position). ***When the door is already open or nonexistent, the stacked position is always used.***



b. **Grenade Employment.**

(1) Shooter Number One maintains cover for Shooter Number Two. Shooter Number Two will show the grenade to Shooter Number One, and immediately begin prepping the grenade. Upon the grenade being prepped, Shooter Number Two will throw the

grenade into the room, and return to the original stacked position behind Shooter Number One. After the grenade explodes, Shooter Number One will cross the threshold and clears his immediate area, Shooter Number Two immediately behind.

c. **Grenade Employment Considerations.**

(1) The preferred technique for **Marines** is to throw a hand grenade into the room so hard that it skips and bounces, making it difficult for the enemy to pick up and throw back. The skip/bounce technique should be used by Marines during training and combat.

(2) Nonverbal And Verbal Alerts. To alert all that a grenade will be thrown, a visual showing of the grenade is made to assault element members, and a visual acknowledgment from them is received. A nonverbal alert ensures that the enemy is surprised when the grenade is thrown. If the situation demands, a voice alert can be used, but the element of surprise may be lost. When or if a voice alert is used, the voice alert is "**FRAG OUT;**" to let friendly units know that a grenade has been thrown by the entry team. When an enemy grenade has been identified, friendly forces shout, "**GRENADE.**" This allows Marines to distinguish between warnings for outgoing and incoming grenades.

(3) The construction material used in the building being cleared influences the use of grenades. In some situations, concussion grenades may be preferred over fragmentary grenades during offensive operations or when defending from hasty defensive positions. If the walls of a building are made of thin material, such as sheetrock or thin ply board, the Marine should either lie flat on the floor with his helmet pointing toward the area of detonation or move away from any wall that might be penetrated by grenade fragments.

(4) Marines should throw grenades into an opening before entering a building to eliminate any enemy that might be near the entrance.

(5) When a hand grenade must be used, the Marine throwing the grenade should stand close to the building, using it for cover. At the same time, the individual and the rest of the element should have a planned area to which they can move for safety if the grenade does not go through the window, but falls back to the ground.

(6) The Marine throwing the grenade should step out far enough to lob the grenade into the upper story opening. The Marine's weapon should be kept in the non-throwing hand so that it can be used if needed. The weapon should never be laid down outside or inside the building. Once the grenade has been thrown into the opening, assaulting forces should move swiftly to enter the building. This technique should be employed only when the window has already been broken. Otherwise, the chances are high that the thrown grenade will bounce off of the window and fall back onto the ground without going into the room.

d. **Actions Inside The Room.**

(1) Crossing The Threshold.

(a) The One-Man steps across the threshold and clears his immediate area. (12:00 o'clock) He engages targets from the ready carry position.

(b) The Two-Man follows immediately behind the One-Man in the opposite direction, and clears his area. (Button Hook Method and Cross Method).

(2) Clearing Assigned Sector.

(a) Both shooters clear the immediate area and along their respective walls, starting from the nearest respective corner and continuing to the farthest respective corner.

(b) Both shooters then establish a dominant position in the room one step away from the wall and two steps into the room and clear the room by sector, pieing to the opposite side of the room.

(c) The Marines use the pie technique to systematically clear the room by sector including overhead. When the one-man checks the overhead, the two-man remains oriented throughout the room covering the one-man. Meanwhile, the covering team (two-man team) in position outside the room being cleared provides security.

e. **Clearing A Room, Door Closed, Split Positions.**

(1) Before opening a door, Shooter Number Two of the clearing team positions himself opposite Shooter Number One on the other side of the door. ***If the door is already open, the stacked positions is always used.***

(2) After Shooter Number One opens the door, Shooter Number Two immediately moves to a kneeling position against the wall. If the Marines have grenades, then Shooter Number Two immediately throws a grenade into the room. If the Marines do not have any grenades, the stand/kneel positioning of shooters places the shooters' weapons at different levels, thus allowing each shooter to engage targets inside the room while staying out of the other shooter's line of fire. The shooters scan the room for targets.

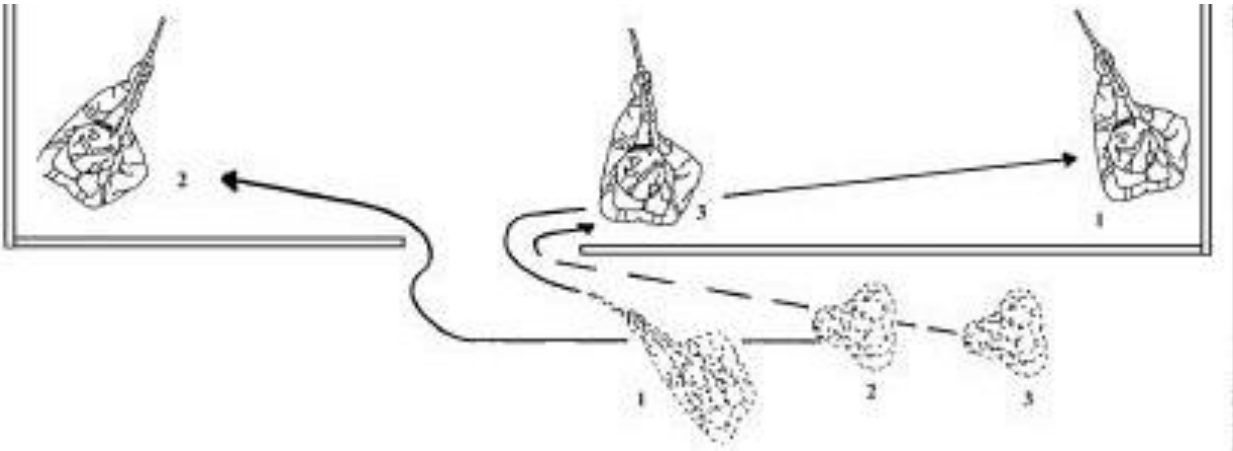
(3) Once the initial scan of the room is complete, Shooter Number One yells, "MOVE," and both shooters pivot from their respective positions toward each other, pieing while maintaining eye-muzzle-target contact. Shooter Number Two is kneeling while Shooter Number One is still standing. Both shooters clear their respective sector of fire.

(4) After scanning is completed, Shooter Number Two stands up and yells, "READY," and Shooter Number One yells, "MOVE." Both shooters enter the room together.

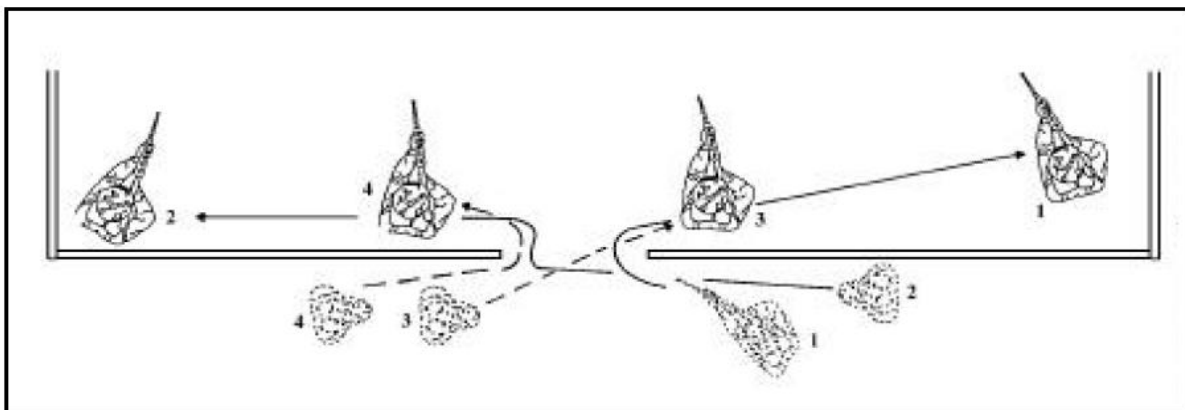
(5) Cross Method. Each Marine alternately enters the room. Each Marine crosses quickly to the opposite corner while covering the half of the room toward which he is moving. Once in the near corner, he assumes an outboard kneeling position to reduce his silhouette and continues to maintain coverage of his half of the room. He may change the position of his weapon to best cover the room.

f. **Three And Four Man Room Clearing.**

(1) Three Marines Clearing A Room. Clearing a room with three men involves the same procedures used by the aforementioned two-man clearing team, with a third Marine (from the covering team) following immediately (stacked) behind Shooters Number One and Two. Shooter Number Three moves to one side of the door and establishes a center sector of fire coverage. The remaining covering team Marine provides outside security. If the split position is used, Shooters Number Two and Three are placed on the opposite side of the door.



(2) Four Marines Clearing A Room. When four Marines are used to clear a room, outside security should be established by another assault element. ***If outside security cannot be established, then the two- or three-Marine clearing team should be used.*** The two-Marine clearing team procedures are used for initial entry into the room. Shooters Number Three and Four) stack up opposite Shooters Number One and Two. Shooters Number Three and Four follow Shooter Number Two into the room. Shooter Number Three crosses the threshold and establishes a center sector of fire coverage. Shooter Number Four follows Shooter Number Three and establishes a center sector of fire coverage opposite Shooter Number Three. If the stacked position is used to enter a room, all shooters stack up on the same side of the door and follow each other in with the same positioning.



g. Communication.

(1) It is CRITICAL that all assault element members tell each other where they are to avoid fratricide (the accidental killing of one's own forces in war). Unit SOP dictates common commands.

h. **Actions When Exiting Rooms Or Buildings.**

(1) When the clearing team has cleared the room and is ready to exit the room, it uses the following voice alerts. Once a room has been cleared, the clearing team yells, "**CLEAR,**" to inform the covering team. Before leaving the room and rejoining the covering team, the Clearing team yells, "**COMING OUT**" and waits to hear the covering team yell, "**ALL CLEAR.**" The clearing team then executes its movement out of the room. The assault element then marks the room according to unit SOP.

(2) When moving through buildings, assault forces mark cleared rooms and buildings and communicate with the support forces. Marking cleared rooms is especially critical if more than one assault force or element is in the same building.

(3) The use of glint tape, thermal tape, or chemiluminescent lights is an important consideration. These can be used to mark the FLOT, casualties, cleared buildings and rooms, weapons positions, and individual Marines. Their use must be clearly addressed in the unit's SOP.

(4) When markers are used for extended periods, their meanings should change because the enemy may be able to capture or manufacture and use these marking devices to their advantage.

i. **Reacting To Enemy Contact.** When a platoon or squad is moving along a city street or exiting a building, contact with the enemy could happen at any time, even if the area has been declared secure. If a unit engages or is engaged by the enemy, there are two basic options that Marines may follow. The first and most preferred option is to immediately return fire and conduct a hasty clearing of a structure to seek cover inside of the building to which the unit was adjacent. The second and least preferred method is to remain outside of the building(s) and fight from the street.

(1) **Hasty Clearing.** To conduct a hasty clearing of a structure in order to seek cover, Marines immediately return fire and enter buildings as quickly as possible. The basic principles of entry are applied as discussed earlier however, speed of action is essential. Once inside, Marines quickly scan the area and engage any threat. If no threat is present, the Marines acquire the enemy's positions and deliver carefully aimed shots to achieve fire superiority. At this point, the situation is developed as rapidly as possible and an attack to clear the enemy may be ordered.

(2) Remain Outside And Fight. This option should not be conducted unless strict ROE do not allow the occupation of buildings without being fired on from them first or unless buildings cannot be entered because of obstruction, obstacles, or boobytraps. In such cases, the Marines should quickly acquire the target(s) and return fire to gain fire superiority. They should also seek whatever cover may exist. Once fire superiority is achieved, an assault to clear the enemy may be conducted.

5. **DEFENSIVE TECHNIQUES.** (0300-MOUT-1002b)

a. **Considerations For Holding A Room/Building.**

(1) Protection. Leaders should select buildings that provide protection from direct and indirect fires. Reinforced concrete buildings with three or more floors provide suitable protection, while buildings constructed of wood, paneling, or other light materials require reinforcement to gain sufficient protection. One- to two-story buildings without strongly constructed cellars are vulnerable to indirect fires and require construction of overhead protection for each firing position.

(2) Dispersion. Normally, a position should not be established in a single building when it is possible to occupy two or more buildings that permit mutually supporting fires. A position in one building without mutual support is vulnerable to bypass, isolation, and subsequent destruction from any direction.

(3) Concealment. The fighting position should be concealed. Buildings that are obvious defensive positions should not be selected. The occupation of exposed buildings may be necessary because of requirements for security and fields of fire. Therefore, reinforcement of the structure must be accomplished to provide suitable protection within the building.

(4) Fields Of Fire. Positions should be mutually supporting and have interlocking fields of fire in all directions. Clearing fields of fire may require the destruction of adjacent buildings by using explosives, engineer equipment, and field expedients. Care should be taken to avoid highlighting the building as a defensive position.

(5) Covered Routes. Defensive positions should have at least one covered route that permits resupply, MEDEVAC, reinforcement, or withdrawal from the building.

(6) Observation. The building should permit observation of enemy avenues of approach and adjacent defensive sectors.

(7) Fire Hazard. Avoid selecting positions in buildings that are a fire hazard.

(8) Time. The time available to prepare the defense could be the most critical factor. If enough time is insufficient, buildings that require extensive preparation should not be used. Conversely, buildings located in less desirable areas that require little improvement may be a better choice for a defensive position.

(9) Selecting Positions. Each weapon should be assigned a primary sector of fire to cover enemy approaches. Alternate positions that overwatch the primary sector should also be selected. These positions are usually located in an adjacent room on the same floor. Each weapon must be assigned a supplementary position (to engage attacks from other directions) and a Final Protective Line (FPL). Two ways to establish a fighting position in a building is through Windows and Loopholes:

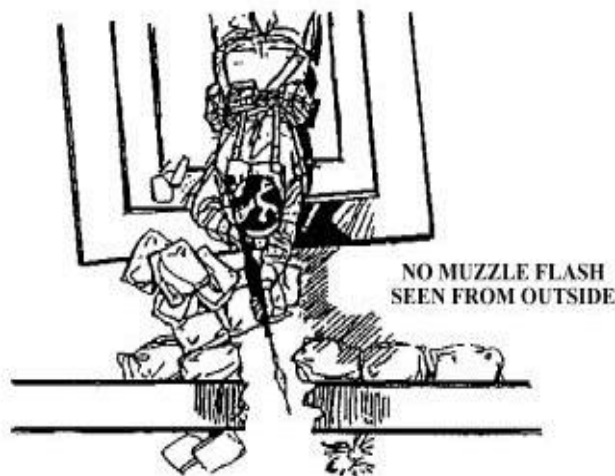
(a) Window Position. Marines should kneel or stand on either side of a window. They must be positioned to prevent the weapon from protruding through the window. When using the proper method of firing from a window the Marine is well back into the room to prevent the muzzle flash from being seen, and he is kneeling to limit exposure and avoid silhouetting himself.



(b) Loopholes. To avoid establishing a pattern of always firing from windows, loopholes should be prepared in walls. Marines should avoid firing directly through loopholes to enhance individual protection.

1. The number of loopholes should be carefully considered because they can weaken walls and reduce protection.

2. Loopholes should be cone-shaped to obtain a wide arc of fire, to facilitate engagement of high and low targets, and to reduce the size of the exterior aperture. When not in use, loopholes should be covered with sandbags to prevent the enemy from firing into or observing through them.



PERFORMANCE EXAMINATION CHECKLIST

0300-MOUT-1001

Given an assigned weapon and a mission, while wearing a fighting load, perform individual movement in an urban environment in accordance with MCRP 12-10B.1.

Student Instructions:

1. You are a Marine and must perform individual movement in an urban environment.
2. There is no time limit associated with this task.
3. To achieve mastery, you must complete the performance checklist and perform individual movement in an urban environment in accordance with MCRP 12-10B.1.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Move parallel to a building.			
a. Maintain close proximity to wall without touching it.			
b. Maintain security and utilize cover/concealment.			
c. Communicate with team members.			
d. Move with speed/purpose.			
e. React to any threat(s), as required.			

2. Negotiate obstacles.			
a. Position security.			
b. Investigate the obstacle for booby traps.			
c. Recon the obstacle, as required.			
d. Maintain a low silhouette.			
3. Observe around a corner.			
a. Position security.			
b. Communicate with team members.			
c. Minimize exposure during observation.			
d. React to any threat(s), as required.			
4. Move past a window.			
a. Move with speed/purpose while maintaining security.			
b. Communicate with team members.			
c. Cross beneath a window, as required.			
d. Pie the window, as required.			
e. Cross over basement window without exposure, as required.			
f. React to any threat(s), as required.			
5. Move past a door.			
a. Move with speed/purpose while maintaining security.			
b. Determine if door is open or closed.			
c. Communicate with team members.			
d. Pie the door, as required.			
e. React to any threat(s), as required.			
6. Cross a danger area (open area).			
a. Communicate with team members.			
b. Provide and maintain security.			
c. Visually recon the danger area and far side.			
d. Identify crossing routes.			
e. Preselect far side positions.			
f. Move with speed/purpose.			
g. Secure the far side.			
h. React to any threats, as required.			

0300-MOUT-1002

Given a weapon and functioning as a member of a team, while wearing a fighting load, perform individual actions while clearing a room to clear the room of threats.

Student Instructions:

1. You are a Marine and must perform individual actions while clearing a room.
2. There is no time limit for this task.
3. To achieve mastery, you must complete the performance checklist and clear the room of threats.

Performance Checklist:

Performance Steps	M	N/M	Remarks
1. Stack outside the entry way.			
a. Identify door open/close.			
b. Minimize exposure during approach and stack.			
c. Form into stack or split position, as appropriate.			
d. Communicate with team members.			
e. Determine which way the door opens, as required.			
f. Open a closed door, as required.			
g. Employ grenades as permitted by ROEs.			
2. Enter the room. (0300-MOUT-1002a)			
a. Use button hook/cross entry technique, as appropriate.			
b. Clear respective corner and cover any immediate threat.			
d. Communicate status.			
3. Clear the immediate area. (0300-MOUT-1002a)			
4. Clear assigned sector. (0300-MOUT-1002a)			
5. Communicate possible threats.			
6. Perform vital checks, as required.			
a. Ensure existing threats are neutralized.			

7. Mark entry way.			
8. Provide security.			

REFERENCES :

<u>NUMBER</u>	<u>TITLE</u>	<u>CHAPTER/PAGE</u>
MCRP 12-10B.1	Military Operations On Urban Terrain	Entire Manual

NOTES :